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SENSORS 2026

Rotterdam, Netherlands || October 25–28, 2026

IEEE SENSORS 2026 CONFERENCE PROGRAM

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Welcome to IEEE SENSORS 2026!

On behalf of the organising committee, we are pleased to welcome you to Rotterdam, Netherlands, for IEEE SENSORS 2026, taking place October 25-28 at Postillion Hotel & Convention Centre WTC Rotterdam. Located in the heart of the city, this premier venue combines history with modern facilities, exceptional hospitality, and easy accessibility, making it the perfect setting for a world-class gathering of innovators, researchers, and industry leaders in sensor technology.

Being the flagship conference of IEEE's largest sensor entity, the IEEE Sensors Council, the IEEE SENSORS Conference brings together researchers, engineers, practitioners, and students from across IEEE's 26 member societies and beyond. Since 2002, IEEE SENSORS has been a premier international platform for showcasing and discussing major aspects of sensor innovations and applications.

As the 25th instalment of this series, IEEE SENSORS 2026 continues a longstanding tradition of offering the highest-quality technical content in an excellent dissemination environment. The program features a comprehensive schedule of lectures and posters, topical workshops and tutorials, live demonstrations, sessions on emerging areas, an industry workshop, and plenty of opportunities for networking and exchanging ideas.

This year's technical program includes 419 Option A papers from 980 regular submissions, 129 Option B papers from 270 journal-conference synergy submissions, and 17 pre-published journal presentations, along with five focused sessions. Amidst the recent global disruptions, these numbers reflect the strong engagement of the global sensing community and the wide range of technical content presented at the conference.

Additionally, the program includes several exciting initiatives that demonstrate our dedication to fostering innovation, inclusivity, and professional growth, such as: The Sensorpreneur Pitch Competition, the Career Fair, the MYOSA competition and several YP & WiSE events specifically focused on networking and career advice.

Three distinguished plenary speakers will present recent research developments and emerging trends that are relevant to a broad segment of our community:

- Jos Benschop (ASML, The Netherlands)
- Genki Yoshikawa (National Institute for Materials Science (NIMS), Japan)
- Ellis Meng (University of Southern California, USA)



Traditionally, community-focused events remain a key part of the conference. There will be a Dutch-themed welcome reception, a dedicated networking reception organised by YP, WiSE and the ILC at the historic City Hall, and a gala dinner in one of the few remaining medieval buildings in the city.

IEEE SENSORS 2026 is made possible through the collaborative efforts of many volunteers, reviewers, sponsors, and participants. We thank everyone for your contributions and for bringing your ideas and energy to Rotterdam.

Welcome to Rotterdam, and welcome to IEEE SENSORS 2026!

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Charusluk Vipavakit, *Chulalongkorn University, Thailand*

Track 2: Sensor Materials, Fabrication and Packaging

Dhiman Mallick, *Indian Institute of Technology, Delhi*
Sharmistha Bhadra, *McGill University, Canada*

Track 3: Chemical, Electrochemical and Gas Sensors

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Hamida Hallil Abbas, *University of Bordeaux, France*

Track 4: Microfluidics and Biosensors

Massimo Mastrangeli, *TU-Delft, The Netherlands*
Yoshikazu Hirai, *Kyoto University, Japan*

Track 5: Optical Sensors

Eric Fujiwara, *University of Campinas, Brazil*
Michiko Nishiyama, *Soka University, Japan*

Track 6: Physical Sensors: Temperature, Mechanical, Magnetic and Others

Ensieh Hosseini, *Durham University, UK*
Filipe Arroyo Cardoso, *TU-Delft, The Netherlands*

Track 7: Acoustic and Ultrasonic Sensors

Sri-Rajasekhar (Raj) Kothapalli, *The Pennsylvania State University, USA*
Stefan Rupitsch, *Universität Freiburg, Germany*

Track 8: Sensor Networks and IOT

Brendan O'Flynn, *Tyndall National Institute, Ireland*
Praveen Kumar Donta, *Stockholm University, Sweden*

Track 9: Emerging Sensor Technologies and Applications

Gayathri Pillai, *Center for Nanoscience and Engineering, Bangalore India*
Maryam Shojaei Baghini, *IIT Bombay, India*

Track 10: Sensor Systems: Signals, Processing and Interfaces

Geethu Joseph, *TU-Delft, The Netherlands*
Hengky Chandralalim, *U.S. Air Force Institute of Technology, USA*

Track 11: Actuators, Energy Harvesters and Powering Sensors

Mark Cheng, *University of Alabama, USA*
Pai-Yen Chen, *Univeristy of Illinois Chicago, USA*

Track 12: Sensor Data Processing and AI

Johan Wahlstrom, *University of Exeter, UK*
André Eugenio Lazzaretti, *Federal University of Technology - Paraná, Brazil*

Track 13: Wearable Sensors and Systems

Eloise Bihar, *University at Buffalo, USA*
Murat Kaya Yapici, *SABANCI University, Istanbul, Turkey*

Track 15: Live Demonstration of Sensors and Sensing Technologies

Calogero Maria Oddo, *Sant'Anna School of Advanced Studies, Pisa, Italy*
Paul Vulto, *MIMETAS, The Netherlands*

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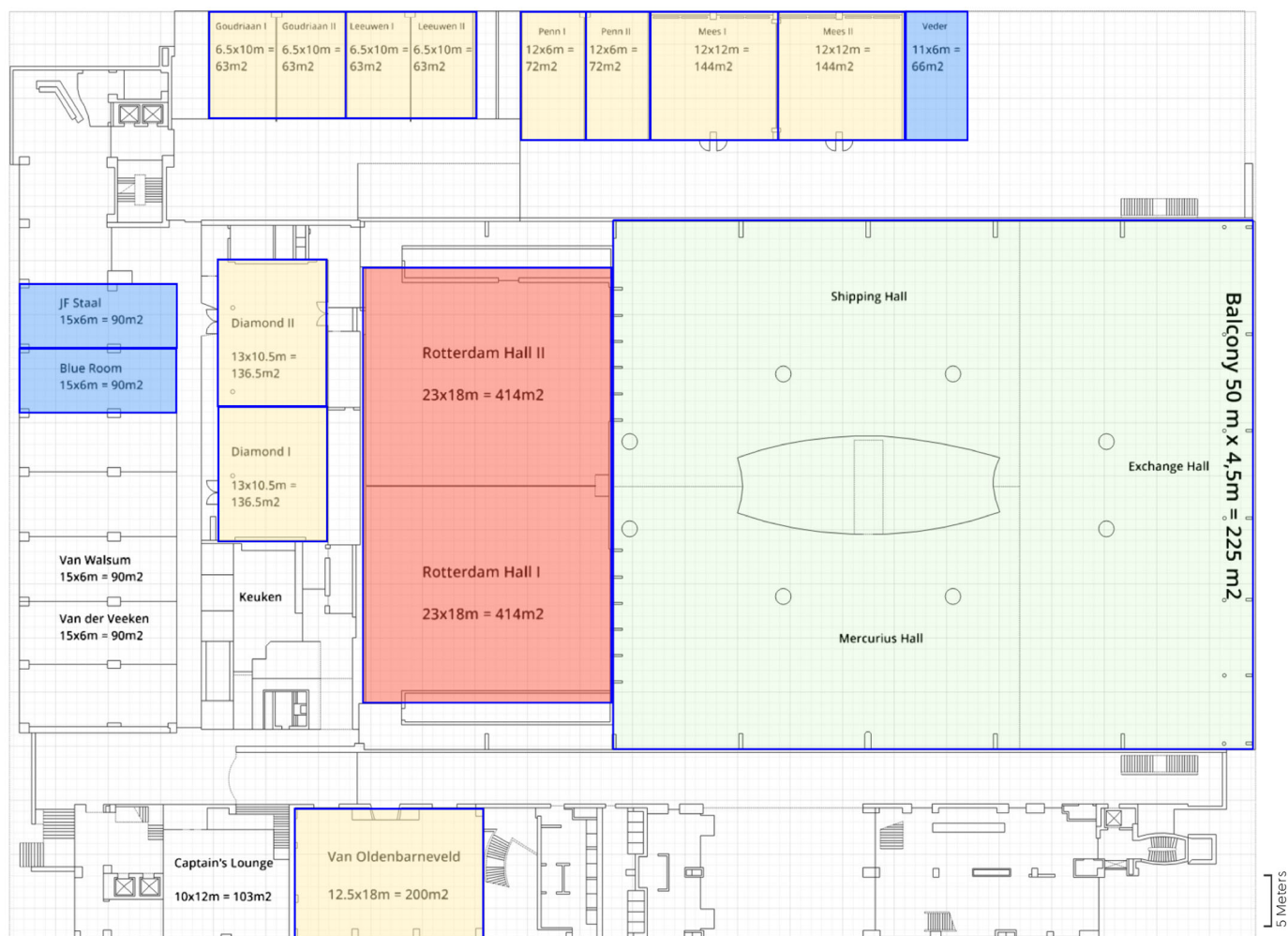


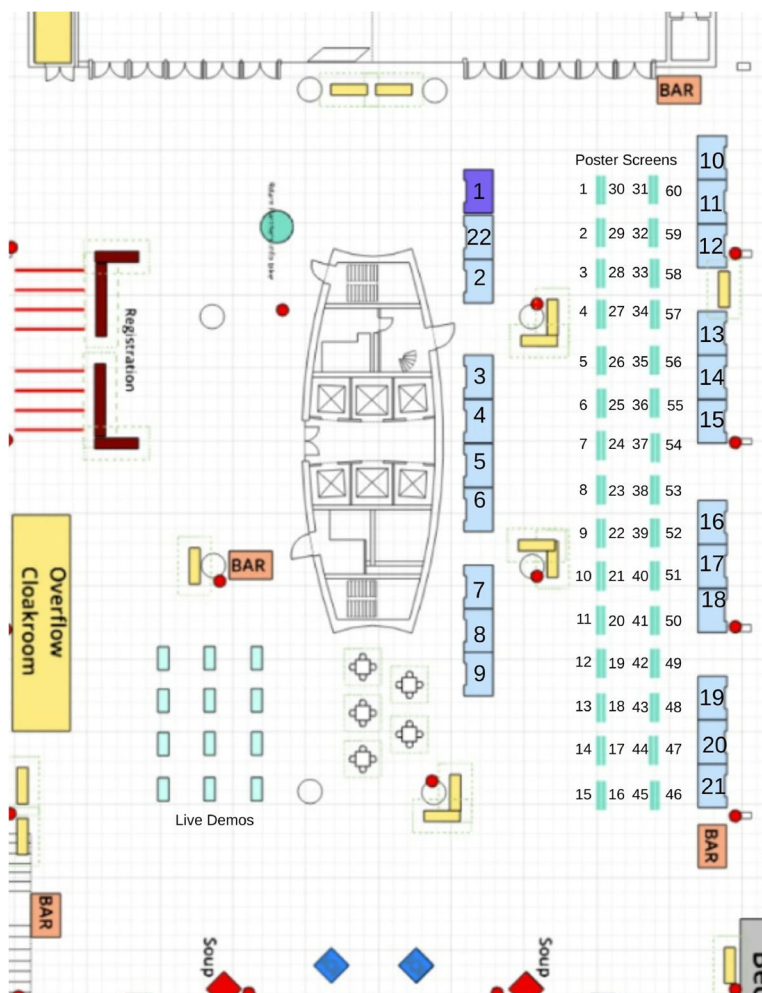
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Jos Benschop, ASML, The Netherlands

Optical Lithography

Monday | October 26, 2026 | 8:30 - 10:00

Optical lithography has been a key enabler of Moore's Law, delivering approximately a 0.7x one-dimensional node on node shrink for several decades and enabling integrated circuits that fuel today's AI-driven computing. This presentation reviews key drivers of the electronics industry and the role of optical lithography in IC manufacturing, highlighting scaling through wavelength reduction, increased numerical aperture (NA), and operation near the physical imaging limit (low k1). Recent results of extreme ultraviolet (EUV) lithography using 13.5 nm light and 0.55 NA, capable of printing 8 nm lines and spaces, are presented. The scanner roadmap is complemented by metrology and computational lithography, together termed holistic lithography, in which sensors play a critical role.



Genki Yoshikawa, National Institute for Materials Science (NIMS), Japan

Olfactory Sensors: Four Decades of Progress, Real-World Deployment Challenges, and Future Directions

Tuesday | October 27, 2026 | 10:30 - 12:00

Odors carry rich information about materials, environments, biological states, and human activities, yet they remain among the most challenging targets for sensor science and engineering. This talk will introduce the principles of olfactory sensors, also known as electronic noses (E-noses), and review more than four decades of research and development in the field, with particular attention to the intrinsic difficulty of sensing dilute, complex, and dynamic gas mixtures. As a case study, our interdisciplinary work on olfactory sensing using nanomechanical Membrane-type Surface stress Sensor (MSS) technology covers mechanical optimization, receptor materials, and AI-driven data analysis.

The talk will also address industry–academia–government collaboration models and entrepreneurial pathways, together with recent field demonstrations in livestock monitoring and lung cancer breath diagnostics. Finally, the talk will discuss where the field stands today, including application areas in which related gas-sensing technologies already provide useful information, why broad and sustained deployment of olfactory sensors remains difficult, and future directions toward practical odor measurement, pursued with the ultimate aim of contributing to world peace.



Ellis Meng, University of Southern California, USA

Sensing at the Interface: Where Sensing Meets the Body

Wednesday | October 28, 2026 | 8:30 - 10:00

The human body poses one of the most challenging environments for sensors. Its dynamic, responsive environment encompasses a complex interplay of biological, chemical, and mechanical factors that threaten sensor interface stability and longevity.

This talk will examine diverse contexts in which sensors directly or indirectly interface with the body to enable scientific discovery and biomedical monitoring – from microelectrode array technologies that record neural activity, to implantable sensor systems that monitor shunt function, to wearable microneedle sensor platforms that continuously monitor molecules. A common theme across these examples design governed by context and use-case. We will also examine how different materials, architectures, and transduction

methods can be adapted to enable new sensing capabilities for biomedical applications.

Tutorials

	Mees Room 2	Mees Room 1	Penn Room 2
8:30-10:00	From Photon to Biochips: A New Frontier in Biomarker Detection	Analog vs. Digital In-Sensor Machine Learning: Fundamentals and Applications	Bioimpedance Analysis–Based Biosensors: Design Principles and Emerging Applications
10:00-10:30	Coffee Break		
10:30-12:00	Next-Generation Optical Fiber Sensing	From Sensor Measurements to Environment Perception: Occupancy Maps for Autonomous Driving and Robotics	From Naïve Loops to FAIR Datasheets: Multi-Threaded Software for Reproducible Soft Tactile Sensor Characterization
12:00-13:30	Lunch		
13:30-15:00	Sensing the City: Fibre-Optic DAS and AI for Smart Transportation	AI-Augmented Electromagnetic Sensing: From Principles to Unobtrusive Biomedical and Industrial Intelligence	Multi-Domain Sensing Principles for MEMS
15:00-15:30	Coffee Break		
15:30-17:00	Hardware–Analytics Co-Design for Trust-Enhanced Gas Sensing	Vibrational spectroscopy for sustainable sensing: the road to in situ detection	Multielectrode array sensing for interpretation of the neural activity in stem cells-derived neuronal organoids

Workshops

	Blue Room	J.F. Staal Room	Leeuwen Room 1 & 2
8:30-10:00	Portable Biomagnetic Sensing Platforms for Healthcare, Wearables, and Human-Machine Interfaces: From PicoTesla Sensors to Scalable Systems	AI-Driven Secure Sensor Systems: Federated Learning, Edge Intelligence, and Trustworthy IoT	Putting Image Sensor Development in Perspective and Lessons Learned for Sensor Technology
10:00-10:30	Coffee Break		
10:30-12:00	Portable Biomagnetic Sensing Platforms for Healthcare, Wearables, and Human-Machine Interfaces: From PicoTesla Sensors to Scalable Systems	AI-Driven Secure Sensor Systems: Federated Learning, Edge Intelligence, and Trustworthy IoT	Putting Image Sensor Development in Perspective and Lessons Learned for Sensor Technology
12:00-13:30	Lunch		
13:30-15:00		Fiber Optic–based Sensors for Human Health and Safety: Emerging Trends and Outlooks	Putting Image Sensor Development in Perspective and Lessons Learned for Sensor Technology
15:00-15:30	Coffee Break		
15:30-17:00		Fiber Optic–based Sensors for Human Health and Safety: Emerging Trends and Outlooks	Putting Image Sensor Development in Perspective and Lessons Learned for Sensor Technology


From Photon to Biochips: A New Frontier in Biomarker Detection

 Wei-Chuan Shih, *University of Houston, USA*

Light-based measurement has long been central to biosensing and imaging. Working across the UV–VIS–NIR spectrum, it occupies a particularly useful regime that combines several practical advantages. The diffraction limit of light allows for contact-free interrogation of structures down to the submicron scale, often with little to no sample preparation. At the same time, photon energies in this range are sufficient to drive a wide range of light–matter interactions—such as absorption, fluorescence, and both elastic and inelastic scattering—while remaining low enough to avoid ionization.

The development of light sources, including lasers and LEDs, has greatly expanded excitation options. Improvements in photoelectric conversion efficiency have enabled high sensitivity detection approaching the single-photon level. These advances together have fueled rapid growth in optical and photonic sensing technologies.

More recently, the integration of optical methods with micro- and nanofabrication has further extended these capabilities, giving rise to highly sensitive platforms for biomarker detection, often referred to as biochips. In this tutorial, I will highlight state-of-the-art strategies for ultra-sensitive biomarker detection from two perspectives: the underlying technologies and the biomarkers themselves. I will also briefly discuss representative examples to illustrate potential routes toward practical implementation and commercialization.


Next-Generation Optical Fiber Sensing

 Joel Villatoro, *University of the Basque Country, Spain*

Optical fibers were proposed for long-distance communications about six decades ago. Soon, researchers discovered that optical fibers could also be leveraged for sensing applications. Nowadays, many optical fiber sensor configurations have matured into successful commercial products and are very competitive in terms of performance. These include gyroscopes, distributed temperature and strain sensors, and fiber Bragg grating (FBG) sensors, among others.

The advent and advancements in specialty fibers as well as the latest 3D-printing manufacturing methods and artificial intelligence (AI) have opened the door to a new generation of optical fiber sensors. This Tutorial will start with the basics and fundamentals of optical fiber sensors, it will follow with a review of the latest advances in optical fiber sensing based multimode and tilted fiber Bragg gratings as

well as of new sensing approaches with multicore, hollow-core, radiation-sensitive, and polymer optical fibers. Ultraminiature sensors based on nano- or micro-structures fabricated on the microscopic facet of an optical fiber will also be reviewed. The Tutorial will end with a discussion on intelligent optical fiber sensing based on data and signal processing by AI, interrogation of fiber sensors by means of photonic integrated circuits, and fiberized quantum sensors.

Sensing the City: Fibre-Optic DAS and AI for Smart Transportation

 Mona Jaber, *Queen Mary University of London, UK*

 Peter Hayward, *T2 Sensing*


This tutorial explores the technology behind fibre sensing, with a particular focus on Optical Time Domain Reflectometry (OTDR) for Distributed Acoustic Sensing (DAS), and examines both established and emerging DAS applications in Intelligent Transportation Systems (ITS).

The first section introduces the underlying physical principles of DAS and reviews its core applications. The second section focuses on deep learning approaches for interpreting DAS signals in the context of ITS, with particular emphasis on modelling active travel, including walking, cycling, and other forms of sustainable mobility.

The final part consists of a hands-on session, during which participants will remotely connect to a live testbed in London. This will provide a unique opportunity to interact with a DAS system in real time, enabling participants to control the system and observe mobility patterns as they are captured.




Hardware–Analytics Co-Design for Trust-Enhanced Gas Sensing

 Radislav A. Potyrailo, *GE Vernova Advanced Research*

Gas sensing is becoming critical for applications ranging from gas speciation of indoor and outdoor air-quality to monitoring of energy-assets, precision agriculture, noninvasive medical diagnostics, and security. However, conventional legacy gas sensors rely on single-output designs that struggle with drift and detection of low-concentration analytes in chemically complex environments.

This tutorial will present a roadmap toward next-generation multi-output gas sensors: inspired by proven traditional analytical instruments such as gas chromatography and spectroscopy, this tutorial will show how their underlying mathematical principles can be translated into new sensing designs to improve selectivity, stability, and reliability. The central focus of the tutorial is understanding of importance of hardware–analytics co-design. Machine learning (ML) cannot fully succeed when sensor outputs contain insufficient independent information. Thus, emerging multi-output sensor architectures - enabled by independent excitation variables, advances in electronics, and edge analytics - create the information richness needed for multi-analyte discrimination, drift correction, and robust calibration. Using multiple examples from research teams worldwide, the tutorial will connect foundational principles to practical design strategies and illustrate commercialization pathways. Tutorial attendees will be equipped with a systems-level understanding of how to design multi-output gas sensors to achieve trusted performance in chemically complex environments.


Analog vs. Digital In-Sensor Machine Learning: Fundamentals and Applications

 Marco Carminati, *Politecnico di Milano, Italy*

A new paradigm is emerging in sensors, especially in energy-constrained applications such as smart wearables or parallelized multi-channel systems, such as radiation detectors, which consists in the migration of processing from the digital back-end towards the analog front-end. This represents the inversion of the traditional paradigm that had progressively pushed the boundary between analog and digital closer to the front-end, moving processing in the digital domain, thus achieving more robustness and versatility. Recently, this consolidated scenario has started to change, as machine learning (ML) techniques have been establishing as preferred tools to process raw sensors signals.

Two strategies can be pursued to apply ML to “close-to-sensor” processing: a traditional approach, named TinyML, in which ML algorithms are adapted to run on low-power microcontrollers (some of which have dedicated accelerators) vs. implementation in analog ways, thus reducing the number of analog-to-digital conversions, limited to sample the pre-processed information. The latter solution can offer higher energy efficiency.

In this tutorial, the key design choices and trade-offs of both approaches will be presented. Starting from a brief review of the fundamentals, examples of applications will be presented in two application domains: smart glasses embedded sensors as well as imaging radiation detectors for diagnostics.


From Sensor Measurements to Environment Perception: Occupancy Maps for Autonomous Driving and Robotics

 Ashish Pandharipande, *NXP Semiconductors, The Netherlands*

 Geethu Joseph, *TU-Delft, The Netherlands*

Occupancy grid mapping (OGM) is a fundamental building block in probabilistic, spatial world models that support safe navigation and decision-making in both autonomous vehicles and mobile robots. This tutorial provides a blend of OGM theory and practice, connecting Bayesian estimation principles with modern autonomy stacks.

We begin with classical formulations: inverse sensor and Bayesian models, and then progress to learning based OGM. We then discuss extensions to dynamic environments (moving objects, temporal filtering, and tracking in grid space) and 3D/semantic grids for richer scene understanding. The session emphasizes impact of anomalies in real-world sensor data from modalities like LiDAR and radar used in OGM, and robustness in adverse conditions. Participants will learn how occupancy grids interface with downstream modules and how to evaluate mapping quality using metrics aligned with real-time constraints and safety requirements. Overall, the tutorial offers both conceptual insights and practical guidance for building robust occupancy-based perception systems in real-world settings.




AI-Augmented Electromagnetic Sensing: From Principles to Unobtrusive Biomedical and Industrial Intelligence

Anwesha Khasnobish, *TCS Research, Kolkata, India*

This tutorial explores the emerging frontier of AI-augmented electromagnetic (EM) sensing, where non-contact technologies are transforming biomedical and industrial monitoring. It demonstrates how contactless systems can enable continuous vital sign monitoring, safe inspection in hazardous environments, and detection of hidden or occluded structures.

The session introduces core EM sensing principles—from wave propagation to signal acquisition—followed by the integration of AI techniques that convert complex signal interactions into actionable insights. However, a key message of this session is that AI cannot compensate for poor sensing—robust instrumentation, signal fidelity, and physics-aware system design remain critical. Adopting an end-to-end perspective, the tutorial bridges sensing hardware and intelligent analytics through real-world case studies. Biomedical examples include radar-based vital sign monitoring, implant sensing, and microwave-based physiological detection, while industrial applications cover subsurface imaging, occluded object detection, and risk prediction in harsh environments such as mining. Designed for researchers, engineers, and students, this tutorial bridges the gap between sensing hardware and intelligent analytics. It provides a comprehensive roadmap for developing reliable, AI-augmented EM solutions for tomorrow's unobtrusive applications.


Vibrational Spectroscopy for Sustainable Sensing: The Road to In Situ Detection

Camilla Baratto, *CNR-INO, Italy*

Vibrational spectroscopy has consistently evolved to the real-world applicability, thanks to the miniaturization of the components. Techniques such as Raman, infrared (IR) and near-infrared (NIR) spectroscopy, that once were used only in controlled laboratory settings, are now moving to portable and hand-held devices that allow the development of in field non-destructive detection tools. Moreover, integration of spectroscopy with chemometric for data pretreatment and automatized analysis of complex spectra projected vibrational spectroscopy in the realm of enabling technologies.

The tutorial provides a comprehensive overview of recent application development of the vibrational spectroscopies, covering also recent field of applications and use of portable instrumentation, with all relevant limitations of reduced resolution and spectral range. Chemometric based enhanced detection will be described along with the discussion on the techniques to ensure that model predictions are based on chemically meaningful spectral features rather than artifacts. Case studies will illustrate how Raman spectroscopy can be applied to optimize harvest yields through monitoring plant health, to detect intentional or unintentional food adulteration, or to sort plastic for sustainable recycling (with an overview of the hot topic of microplastic).


Bioimpedance Analysis–Based Biosensors: Design Principles and Emerging Applications

Pedro Bertemes Filho, *Santa Catarina State University (UDESC), Brazil*

This tutorial provides a comprehensive and accessible introduction to Bioimpedance Analysis (BIA)–based biosensors, highlighting their principles, design strategies, and rapidly expanding applications in healthcare, food safety, and environmental monitoring. Led by Prof. Dr. Pedro Bertemes-Filho, IEEE Senior Member, the tutorial combines fundamental concepts with state-of-the-art developments, covering electrode–electrolyte interfaces, biosensor functionalization, impedance spectroscopy, and system integration.

Through practical examples and recent case studies, participants will learn how BIA enables label-free, sensitive, and miniaturized sensing platforms for point-of-care diagnostics, wearable systems, and IoT-enabled monitoring. Structured in two interactive 50-minute sessions, the tutorial is designed to engage both early-career researchers and experienced practitioners, fostering cross-disciplinary discussion among communities in sensors, electronics, materials, and biomedical engineering. Attendees will leave with a clear framework to design, evaluate, and apply BIA-based biosensors in real-world scenarios, as well as insight into emerging trends and future research opportunities in this rapidly evolving field.


From Naïve Loops to FAIR Datasheets: Multi-Threaded Software for Reproducible Soft Tactile Sensor Characterization

 Matteo Lo Preti, *Soft Robotics Lab (NUS), Singapore*

In soft tactile sensing, the script that drives the rig — not the sensor — is often what makes published numbers fail to reproduce. Blocking serial reads, race conditions, and disk-write latency silently corrupt nominally identical experiments. This reproducibility gap is now editorially recognised across soft robotics and tactile sensing.

This tutorial is the inaugural community deployment of an open-source pipeline for reproducible soft tactile-sensor metrology. Starting from a live broken-script demo, it derives a Prioritized Producer–Consumer / MVC architecture in Python — isolated GUI, Coordinator, Motion, Logger threads, deterministic rate limiting, latest-value polling, asynchronous SQLite-WAL logging, ISO-14577-compliant Surface-Find — and walks through the FAIR Digital Datasheet schema and the cross-laboratory Embodiment Coefficient.

Attendees leave able to (i) diagnose the timing bugs corrupting their existing scripts, (ii) configure the toolkit for their own hardware in mock-hardware mode, and (iii) emit a FAIR datasheet record for any conformant transduction principle.


Multi-domain Sensing Principles for MEMS

 Appo van der Wiel, *Melexis, Belgium*

How do we push the fundamental limits of measurement when working across mechanical, thermal, and magnetic domains?

As sensors become increasingly heterogeneously integrated, opportunities arise to fundamentally improve the measurement system. This seminar introduces a methodology how to design such multi-domain sensing systems.

We will dissect measurement as a two-step process of conversion and comparison. The difference between direct and indirect conversion is explained by analyzing the sensor transfer-function. The advantages of direct measurement are demonstrated with several examples.

For comparison we distinguish between absolute, relative and differential measurement. It will be explained why relative measurement is preferred and how in some cases absolute measurement can be turned into relative or even differential measurement. Discover the differential transfer function of a soft magnetic disc and why a calorimetric flow meter is effectively a thermal Wheatstone bridge.

The tutorial finally demonstrates non-electrical feedback loops. Feedback in the thermal domain is explained with a case study about a Far-Infra-Red sensor. It will be shown how such a sensor can be turned into a direct sensor by applying thermal feedback which fundamentally improves the sensor performance.

You will leave with a toolkit to high-performance measurement systems.


Multielectrode Array Sensing for Interpretation of the Neural Activity in Stem Cells-derived Neuronal Organoids

 Yagmur Demircan Yalcin, *Radboud University Medical Center, The Netherlands*

Recording neural activity in traditional two-dimensional cell cultures is well established. In contrast, three-dimensional (3D) systems like organoids introduce new challenges, from reliable electrical interfacing and signal acquisition to interpreting complex, noisy, and highly variable data. This tutorial addresses this full pipeline, combining experimental and analytical perspectives on neuronal organoid electrophysiology using multielectrode arrays (MEAs).

Our tutorial covers two main aspects: (1) Method selection for recording 3D neuronal organoids, (2) Data analyses. First, training begins with fundamentals of neuronal organoid systems and the challenges of bioelectronic interfacing in 3D, including electrode design and limitations of current measurement approaches. Participants will gain insight into how experimental choices shape recorded signals. Second, the tutorial covers key methods for analyzing neural activity, including spike detection, activity patterns, and network dynamics. A central emphasis is placed on interpretation to understand what measured signals represent biologically, and how experimental constraints, noise, and variability influence conclusions. Through guided analysis of real MEA datasets, participants will explore how measurement and analysis strategies affect results.

Designed for both engineers and life scientists, this tutorial requires no prior experience. Participants will leave with practical framework connecting experimental design, signal acquisition, and interpretation in advanced 3D in vitro neural systems.

AI-Driven Secure Sensor Systems: Federated Learning, Edge Intelligence, and Trustworthy IoT

Muhammad Zunnurain Hussain, *Bahria University, Lahore Campus, Pakistan*

The proliferation of sensor-based systems across smart cities, healthcare, and industrial IoT (IIoT) has created unprecedented challenges in ensuring security, privacy, and real-time intelligence. Conventional centralized approaches are increasingly inadequate due to latency constraints, data sensitivity, and scalability issues in distributed sensor environments.

This workshop explores emerging solutions at the intersection of artificial intelligence and sensor systems, focusing on federated learning, edge intelligence, and trustworthy AI. It aims to bring together researchers and practitioners to discuss innovative architectures, decentralized analytics, and secure data-sharing mechanisms for next-generation sensor networks.

Through interactive sessions, expert insights, and collaborative discussions, participants will examine real-world applications, adversarial threats, and design challenges. The workshop emphasizes inclusivity and engagement, offering a platform for both early-career and established researchers to exchange ideas and identify future research directions in intelligent and secure sensing systems.



Fiber Optic-based Sensors for Human Health and Safety: Emerging Trends and Outlooks

Francesco Chiavaioli, *National Research Council of Italy (CNR) - Institute of Applied Physics "Nello Carrara" (IFAC)*

Paola Saccomandi (WiSe Co-Chair), *Politecnico di Milano, Italy*

Stefania Campopiano, *Università degli Studi di Napoli "Parthenope," Italy*

The program develops on three keynote contributions. The first explores the role of optical fiber sensing in infrastructure monitoring and physical layer security, highlighting how distributed sensing technologies can enhance safety, resilience, and threat detection in critical systems. The second focuses on biomedical applications in ionizing radiation environments, presenting recent developments in fiber optic sensors for dosimetry, radiotherapy, and nuclear medicine, where precision and real-time monitoring are essential. The third keynote addresses the rapidly evolving field of theranostic devices and sensing in in vivo scenarios, showcasing how fiber optic technologies are enabling minimally invasive diagnostics and integrated therapy solutions, while maintaining high standards of safety and biocompatibility. After a roundtable offering space for open discussion with speakers, moderators and attendees, time will be dedicated to flash talks of young researchers and to a meet-the-expert session.

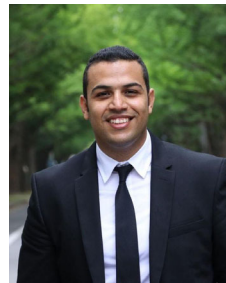
By bridging applications from large-scale infrastructure to advanced biomedical systems, the workshop aims to provide a comprehensive overview of current trends, technological challenges, and future directions in fiber optic sensing. It will foster interdisciplinary dialogue among researchers and practitioners, promoting the translation of innovative sensing approaches into impactful solutions for human health and safety.



Portable Biomagnetic Sensing Platforms for Healthcare, Wearables, and Human-Machine Interfaces: From PicoTesla Sensors to Scalable SystemsHadi Heidari, *University of Glasgow, Scotland, United Kingdom*Siming Zuo, *Neuranics, United Kingdom*Negin Ghahramani Arekhloo, *Neuranics, United Kingdom*Rasly Mahmoud, *Neuranics, United Kingdom*

PicoTesla-level magnetic biosensing is rapidly advancing as a promising non-invasive to physiological measurement, with potential applications in healthcare, wearable, and human-machine interfaces. Compared to conventional electrical measurements, biomagnetic measurements can provide improved spatial resolution without the need for direct electrical contact with the body. However, achieving reliable and repeatable measurements requires more than highly sensitive magnetic sensors. It requires an integrated system-level approach that combines sensitive and robust sensor technology, realistic simulation platforms, advanced signal processing, and application-driven system development.

The proposed workshop brings together leading experts from industry and academia along with students and early-career researchers to solidify new pathways towards scalable, application-driven biomagnetic sensing systems. Using magnetocardiography (MCG) and magnetomyography (MMG) techniques as key enablers, we will explore how advanced magnetic sensing technologies, such as tunnelling magnetoresistance (TMR) sensors and optically pumped magnetometers (OPM), can support picoTesla-level recordings, while addressing practical challenges including environmental noise, sensor saturation and operation outside magnetically shielded chambers. The role of simulation in modelling biomagnetic signal generation and system design will also be discussed, alongside the use of software and machine-learning techniques to extract critical physiological data. The workshop will conclude with a live demonstration of picoTesla-level recordings in open-environment using TMR sensors.



Putting Image Sensor Development in Perspective and Lessons Learned for Sensor TechnologyDan McGrath (Industry Liaison), *TechInsights, USA*Jonathan Steckel, *STMicroelectronics, Italy*Davide Marani, *SONY*

A retrospective on the challenges faced as image sensor technology developed to enable its present commercial success, how these were met, and what the experience can teach other sensor technologies to follow. It includes a historic perspective, an overview of process enhancements to embed a transducer element into the mass-market CMOS flow, and case studies to illustrate the process. It also has a forward look into how image sensors are adapting to the role as sensors at "the edge of the Cloud". Image sensor technology has been a pathfinder as a highly-integrated, manufacturable link between physical phenomena and the electronic world. It has demonstrated the successful development of design and process enhancements to enable this while building on the CMOS flow that is the foundation of the success of the semiconductor ecosystem that benefits us all today. It has overcome technical barriers to where its products have mastered the challenge of integrating mega-arrays of sensors with wide dynamic range and a precision that reaches down to counting individual photons. It has accomplished this in a way that it can be in our cell phones, in our autos, in our factories, and more.

The challenge taken up in this workshop is to provide this story so that the broader sensor community might learn from the experience. The hope for the workshop is that it will both attract attendees from the image sensor community who would benefit from an organized telling of this story and those from the broader sensor community who could find benefit as they work to follow a similar trajectory toward becoming central to life in a high-tech world.



*In-Conference Workshops are included in full conference registration and do not require an additional payment to register.

Room: Van Oldenbarnevelt Room

First session from 13:00 to 15:00

Second session from 15:30 to 17:15

Sensors for Intelligent Robotic and Humanoid Systems

Enrico Alessi (Industry Liaison), *STMicroelectronics, Italy*

Michele Magno, *ETHZ University of Zurich, Switzerland*

Calogero Maria Oddo, *Sant'Anna School of Advanced Studies, Pisa, Italy*

Intelligent robotics and humanoids are rapidly moving from research laboratories into real-world environments, where they are increasingly expected to operate with dexterity, autonomy, safety, and resilience. At the core of this transition lies sensor technology and, more broadly, sensor-based systems that enable machines to perceive, interpret, and interact with complex and unstructured environments. From tactile and force sensing to vision, proprioception, multimodal fusion, embedded intelligence, and real-time control, sensors are becoming the key enablers of next-generation robotic platforms.

This workshop aims to bring together academia, industry, SMEs, startups, and research institutes to discuss the most pressing scientific and technological challenges in sensors and sensor-driven systems for intelligent robotics and humanoids. The program is designed to foster a balanced and vibrant exchange of perspectives, with strong emphasis on industry-driven needs, application constraints, and translation pathways toward deployable solutions. In particular, the workshop will highlight open problems such as robust sensing in harsh and dynamic conditions, scalable integration of heterogeneous sensors, low-latency perception and control, energy-efficient architectures, calibration and reliability, manufacturability, and the design of sensors that can support safe human-robot interaction and advanced embodied intelligence.



Sensors for Quantum Computing and Cryogenic Applications

Filiberto Ricciardella, *TNO, the Netherlands Organization for Applied Scientific Research*

Scientists and industry innovators are welcome to present their work in the Focused Session entitled “Sensors for quantum computing and cryogenic applications”. This session highlights the rapidly growing intersection between advanced sensor technologies, ultra-low-temperature operation, and next-generation quantum systems.

As quantum computing, superconducting electronics, and deep-space instrumentation progress, the demand for sensors capable of operating reliably at cryogenic temperatures has never been greater. This session provides a platform to showcase breakthroughs in device physics, materials, integration strategies, and readout techniques that enable sensing in the millikelvin-to-liquid-helium regime.

This focused session aims at bringing together experts across academia, national laboratories, and industry to exchange insights and accelerate progress in this strategically important field. Attendees will gain exposure to state-of-the-art developments, ongoing challenges, and opportunities for collaboration in a domain essential to the future of quantum technologies.

Scientists working on cryogenic sensors or quantum-enabled devices are encouraged to submit their latest results and join IEEE Sensors conference for an engaging and forward-looking session.

Benchmarking and Reproducibility in Soft Tactile Sensing

Matteo Lo Preti, *Soft Robotics Lab (NUS), Singapore*

Petr Trunin, *Istituto Italiano di Tecnologia (IIT), Italy*

Perla Maiolino, *University of Oxford, UK*

Lucia Beccai, *Istituto Italiano di Tecnologia (IIT), Italy*

Cecilia Laschi, *National University of Singapore*

Tactile sensing is undergoing a technological revolution, poised to endow machines with a compliant, information-rich sense of touch. Recent innovations in materials science and fabrication have yielded a diverse landscape of soft and conformable sensor technologies. However, the inherent physical complexities of these materials, such as viscoelastic creep, mechanical hysteresis, and large-strain deformation, make their electromechanical behaviors highly non-linear. Consequently, the lack of widely adopted, cross-platform benchmarking protocols has severely fragmented the field, making it difficult to properly compare different sensing approaches.

Moreover, researchers frequently struggle to decouple intrinsic material properties from the "embodiment gap" that occurs when sensors are integrated into compliant robotic structures. Also, AI-driven manipulation and sim-to-real robotic control are currently bottlenecked by the lack of standardized, high-fidelity datasets. This Focused Session seeks to unify the community by shifting the paradigm from ad hoc component testing to reproducible benchmarking. We invite contributions that explore standardized characterization pipelines, open-source testing frameworks, physics-based mitigation of electromechanical artifacts, and the generation of FAIR (Findable, Accessible, Interoperable, and Reusable) tactile datasets. By establishing a common language for experimental execution, this session aims to accelerate the evolution of soft tactile sensing into a mature, reproducible engineering discipline capable of seamless robotic integration.

Novel Sensors Systems for Sustainable Agri-Food and Environmental Applications

Pierre Lovera, *Tyndall National Institute, Ireland*

Grégoire Herzog, *LCPME, Université de Lorraine – CNRS, France*

This session is designed to bridge the gap between cutting-edge research and real-world applications in the agri-food and environmental sectors. We invite submissions that showcase novel sensors and advanced sensing technologies, to address critical challenges in quality assurance, safety monitoring, and sustainability.

Key Themes and Topics:

Novel Sensors and Enabling Technologies

- Development of next-generation sensors for real-time monitoring.
- Miniaturized, low-cost, and portable sensing devices.
- Innovations in biosensors, nanosensors, and electrochemical sensors.
- Integration of IoT (Internet of Things) and AI (Artificial Intelligence) for smart sensing.

Sensing Technologies for Earth Observation and Beyond

- Remote sensing applications for agriculture, water, and soil management.
- Use of drones, satellites, and hyperspectral imaging for environmental monitoring.
- Advances in proximal sensing (e.g., spectroscopy, imaging) for precision agriculture.

Applications in Quality and Safety

- Water: Detection of contaminants, pathogens, and emerging pollutants.
- Soil: Monitoring soil health, nutrient levels, and heavy metal contamination.
- Food: Ensuring food safety through rapid detection of toxins, allergens, and spoilage indicators.

While submission should be centred around sensor and sensing system, contributions including following topics are also welcome and of interest:

- Integration and Decision Support Systems
- Data fusion techniques to combine multi-source sensor data.
- AI/ML-driven analytics for predictive modeling and risk assessment.

Biodegradable Sensors

Clementine Boutry, *TU-Delft, The Netherlands*

Giuseppe Barillaro, *University of Pisa, Italy*

The development of biodegradable sensors and technologies is attracting increasing attention for improving the sustainability of electronic systems in specific application contexts, while also enabling new medical applications. In biomedical contexts, biodegradable sensors that can be implanted or injected offer significant advantages, as they can operate for a defined period and then safely degrade within the body, eliminating the need for surgical removal.

This opens new possibilities for temporary monitoring and therapeutic interventions. Beyond healthcare, biodegradable sensing technologies are increasingly explored to address the growing environmental impact of electronic waste, particularly for large-scale and distributed sensing systems such as those used in environmental monitoring and the Internet of Things.

This symposium brings together expertise across the full spectrum of biodegradable sensor research, including materials development, device engineering, energy harvesting and powering strategies, and the assessment of degradation processes and by-products. A central challenge is to ensure that biodegradable sensors maintain stable and reliable performance throughout their intended operational lifetime, which may range from a few days for implantable devices to several years for environmental applications. Achieving performance levels comparable to conventional, non-degradable sensors remains a key objective.

Current approaches focus on optimizing device architectures and improving the understanding of how fabrication processes influence the properties of biodegradable composites and multilayer systems. In parallel, increasing attention is being paid to the fate and impact of degradation products, both in the human body and in the environment. This is particularly important in light of growing concerns about persistent pollutants such as microplastics. Advancing biodegradable sensor technologies therefore requires not only innovation in materials and design, but also a comprehensive understanding of their full life cycle and long-term impact.

Transient Sensory Interfaces: Developing Green Approaches Toward Sustainable Bioelectronics

Roghaieh Parvizi, *meLAB, Transient Sensory Interface Group, Scotland, United Kingdom*

Hadi Heidari, *University of Glasgow, United Kingdom*

Parikshit Sahatiya, *Birla Institute of Technology and Science (BITS) Pilani Hyderabad Campus, India*

Transient Sensory Interfaces: Developing Green Approaches Toward Sustainable Bioelectronics explores the paradigm shift toward electronic systems engineered for controllable disappearance. As the global crisis of electronic waste intensifies and clinical demands for minimally invasive diagnostics rise, this session presents the state-of-the-art in bioresorbable sensing technologies. Transient electronics are designed to perform sensing or therapeutic functions over a defined timeframe before undergoing controlled physical and chemical degradation into benign byproducts, thereby eliminating the need for secondary surgical retrieval or long-term e-waste management.

This highly interdisciplinary session will convene global leaders in materials science, fabrication engineering, and clinical neurotechnology to discuss recent breakthroughs. Topics will range from the development of novel biodegradable polymer composites and bioresorbable conductors to 3D-printed sensory systems. Furthermore, the session will address critical systemic and commercialization challenges, such as signal drift compensation during material dissolution and mitigating the environmental impact of degradation byproducts. Importantly, discussions will contextualize these technological advancements within the framework of upcoming EU sustainability regulations, including the Circular Economy Act, the Ecodesign for Sustainable Products Regulation, and the Green Claims Directive. Topics covered in this focus session will consider:

- 1-Novel Transient Materials: Engineering of bio-resorbable polymers, water-soluble metals, and porous silicon for controlled dissolution.
- 2-Mechanical Integrity & Interface Engineering: Study of strain-limited architectures and flexible interfaces that maintain sensing accuracy during the degradation process.
- 3-Multi-modal Sensing Platforms: Integration of physical, chemical, and electrophysiological sensing.
- 4-Triggered & Programmed Degradation: Advanced techniques for external triggering of device degradation via thermal, optical, or enzymatic stimuli.
- 5-Biocompatibility & Environmental Toxicology: Assessments of the metabolic and ecological impact of degradation byproducts.
- 6-Wireless Power & Data Transmission: Near-field communication and inductive coupling solutions for battery-less transient operation.

AI Driven Sensor Systems and Computational Imaging

Hongjiu Tao, *Professor, REMP Corporation / Information Engineering, Canada*

Recent advances in sensing technology, computational imaging, and artificial intelligence have significantly transformed the capabilities of modern sensor systems. Emerging sensors integrated with intelligent algorithms enable advanced applications in autonomous systems, smart cities, industrial automation, environmental monitoring, and biomedical imaging.

This focused session aims to bring together researchers and practitioners working on cutting-edge developments in sensor technologies, imaging systems, and intelligent data processing methods. Topics of interest include, but are not limited to:

- Advanced sensor design and integration
- CMOS image sensors and smart sensing devices
- Computational imaging and image reconstruction
- AI-based image processing and pattern recognition
- Sensor fusion and multimodal sensing systems
- Intelligent control systems for sensor networks
- Edge AI for real-time sensing applications
- Remote sensing and environmental monitoring

The session will provide an interdisciplinary platform for researchers from academia and industry to present recent innovations, discuss emerging challenges, and explore future directions in sensor-driven intelligent systems.

Finals @ SENSORS 2026 | 14:30-16:00 | Monday, October 26 | Van Oldenbarnevelt Room

This competition is to motivate young students/researchers to develop entrepreneurial and business mindsets with their skills and training on sensor research and development. This competition will allow the shortlisted candidates to get mentored to evolve their idea into product towards commercialization.

Top 5 Finalists

- Victor Kimaru: Kilimo Fly: An IoT-Based Decision Support System for BSF Farmers
- Oluwaseun Araromi: Med Tech: Parkinson's Disease Wearable
- Mou-wei Chang: Acoustic Sensing-Based Smart Inhaler for Lung Drug Deposition Estimation and Early Asthma Risk Detection
- Montserrat Ramirez Del Angel: Magnetic Skin System for Voice Disorders
- Emmanuel Masundi: LUNA-DRONE KENYA

Competition Rules

- Proposal Submissions are now closed.
- The judging and mentoring panel will consist of entrepreneurs and industry experts who will first short list ten candidates from the submissions.
- The ten candidates will be mentored to understand the market potential of their idea, guidance towards pitch talk, understanding of budgeting and financial resources amongst others. This will be from April to August 2026.
- July 31, 2026: The ten candidates will be required to submit to the panel their improved proposal (6-slides worked out pitch) including market survey and plans to commercialise.
- August 17, 2026: the panel of experts will further shortlist the ten candidates to 5 finalists who will be asked to attend the Sensors Conference 2026 at Rotterdam, Netherlands and deliver the 10 minutes pitch talk to the panel of experts.

Tuesday, October 27 | 12:00 - 13:00 | Room: J.F. Staal Room

Panelists

Ellis Meng, *University of Southern California, USA*

Genki Yoshikawa, *National Institute for Materials Science (NIMS), Japan*

Veda Sandeep Nagaraja (Sensorpreneur Pitch Lead), *Tyndall National Institute, Ireland*

Filiberto Ricciardella, *TNO, the Netherlands Organization for Applied Scientific Research*

Building a career is tough, but building a scientific one means walking the tightrope of temporary contracts, navigating a minefield of rejections, and running the publish-or-perish treadmill. But look beyond the hurdles, and you will find a deeply rewarding journey.

To help you get there, our Young Professionals 'Growing up in Science' panel discussion brings you crucial insights from established researchers. Whether you are working through your PhD, leading your own research group or considering a leap into industry, learning from the journeys of fellow scientists is invaluable. Join us to discover how to navigate a scientific career in academia or industry and feel free to actively ask our panel members questions, or simply sit back and listen to how you can develop your career.



Wednesday, October 28 | 12:00 - 13:00 | Room: J.F. Staal Room

Workshop on Sensor Industry Grand Challenges and Standards

Panelists

Stephen F. Bart, Distinguished Member of Technical Staff, The Charles Stark Draper Laboratory, Cambridge, MA, USA

Bruce Hecht, VG2PLAY, Boston, MA, USA

R Venkatesha Prasad, Delft University of Technology, The Netherlands

The sensors industry has been evolving for over 100 years. It contains thousands of sensors for a myriad of parameters. But it is by and large made up of analog sensors for point solutions that are not scalable to the burgeoning IOT world and the artificial intelligence revolution. The sensor industry faces a number of “Grand Challenges” that hold it back from increased performance, lower size and power, IOT scalability and adoption of AI. These Grand Challenges are problems that are 1) too difficult; 2) too time-consuming; or 3) too expensive for a single company to solve.

The IEEE Sensors Council, through its Industry Liaison Committee (ILC), has launched an initiative to explore these Industry Grand Challenges. We seek to define them, develop roadmaps for their solution, develop standards for interoperability, and ultimately provide resources to build partnerships for their solution.

This workshop at IEEE SENSORS 2026 is the ILC’s inaugural workshop to explore Sensor Industry Grand Challenges. We will show some of the work that the ILC has done to date and then attendees will break out into topic area groups to develop ideas further. We will also discuss the importance of developing Standards.

This workshop is by invitation. If you would like to attend and contribute, please send an email to [Conference Manager](#) with a brief statement about why you want to attend.



17:00-18:30 | Tuesday, October 27 | Shipping, Exchange & Mercurius Hall



IEEE Sensors Council

IEEE SENSORS 2026
Rotterdam, Netherlands | October 25-28, 2026

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PROPOSAL SUBMISSIONS DEADLINE: JUNE 21, 2026

REGISTRATION IS FREE BUT MANDATORY

FOR MORE INFORMATION  <https://sites.google.com/view/myosa-event-ieee-sensors/home>

*This is an educational activity initiative of IEEE Sensors Council

Welcome to the IEEE International MYOSA Event!

What is the aim of this competition?

It aims to excite submissions of innovative ideas, followed by live demonstrations of working prototypes in the flagship conferences of the IEEE Sensors Council. Some of the examples of the project proposals are given below:

- Automated lighting system of a smart housing
- Diagnostic applications based on a gesture sensor
- Automated irrigation for smart agriculture

Awards

Cash Prizes worth \$1000

All participating teams (selected for live demonstration) will receive a Participation Certificate

WELCOME RECEPTION AND YOUNG PROFESSIONALS POSTER SESSION

Don't miss the Welcome Reception at IEEE SENSORS 2026 — a perfect chance to connect, relax, and kick off the conference in style!

Invitation to the Young Professionals Poster Session

We are excited to invite students, early-career researchers, and IEEE Young Professionals to participate in the Emerging Ideas in Sensors: Young Professionals Poster Session at IEEE SENSORS 2026. This informal session is the perfect opportunity to present early-stage research, innovative ideas, prototypes, or work in progress—even if you do not have an accepted conference paper. Whether you are a first-time presenter or simply have an exciting idea to share, we encourage you to join us, connect with the sensors community, receive valuable feedback, and compete for the Best Young Professionals Poster Awards. Posters will be accepted on a first-come, first-served basis after undergoing a brief review based on quality and innovation, until the poster capacity is reached.

Sunday | October 25, 2026 | 18:00 – 20:00

Location: Shipping, Exchange, and Mercurius Hall

WISE NETWORKING LUNCH

This event aims to provide a welcoming space for the sensor community to share their experiences and diverse perspectives to enhance sensor innovation and equity outcomes. It is the opportunity to meet colleagues from all over the world and different communities who share similar values.

How to Let Go When Networking

Speaker: Dr. Barry W. Fitzgerald, *BW Science*

Monday | October 26, 2026 | 12:00-13:00

Location: J.F. Staal Room

YP/WiSe/ILC Networking Reception at Rotterdam City Hall

The IEEE SENSORS 2026 Young Professionals (YP), Women in Sensors Engineering (WiSe), and Industrial Liaison (ILC) communities invite conference attendees to an evening networking reception at Rotterdam City Hall, hosted by the City of Rotterdam. The evening opens with a welcome address from the Vice-Mayor of Rotterdam, followed by a series of networking games designed to break the ice and spark conversations between students, early-career researchers, and senior members of the sensors community. Whether this is your first conference or your twentieth, the reception is a relaxed way to meet new colleagues and build connections that extend well beyond the technical program. Drinks and snacks will be served throughout the evening.

Pre-registration is required. Attendance is limited by venue capacity, and only attendees who have registered in advance will be admitted. Registration at the door is not possible.

Event details

- Date: Monday, 26 October 2026
- Time: 17:30 to 19:00
- Venue: Rotterdam City Hall (Stadhuis), Coolsingel 40, 3011 AD Rotterdam
- Getting there: Registered attendees will gather at the conference venue at 17:15 and walk to City Hall together (about 5 minutes). You may also make your own way there.
- Entry: Your conference badge and lanyard are required for entry and will be checked by City Hall security.

Questions? Contact Joseph Andrews (joseph.andrews@wisc.edu)

INDUSTRY CAREER FAIR

The 2026 IEEE SENSORS organizing committee is excited to announce our 2nd annual SENSORS Career Fair. The Career Fair will offer space and time for potential job seekers and companies to interact and connect. The Career Fair will take place on **Tuesday at 17:00 - 18:30** at the conference venue.

For Participants: Get your resumes/CVs ready! At registration, you'll be able to confirm your interest in attending the Career Fair. With this option, you can also upload your resume/CV, which may be shared with companies, given your permission.

For Companies: We're excited to offer three options for your participation at the Career Fair:

Participation in the Career Fair is now included for all exhibitors. Resumes/CVs of attendees will be provided and the exhibition space will be used as the primary venue for the Career Fair.

Table space during the Career Fair event for non-exhibitors: A table, at a cost of \$1000, will be provided for you to set up recruiting material that you'd like to present at the conference. Access to all student resumes is provided in advance of the conference. If interested in having a table, register through the link provided below and add a table to your registration.

Attend for conversations: The final option will be to just attend the Career Fair as a regular conference registrant or exhibitor and interact with others!

The list of companies (along with a link to their postings or general website) that participate under either of the first two options will be posted on the conference website to facilitate interactions between conference registrants and companies.

You will be able to select a career fair table as an optional additional item in your [conference registration](#) if you wish to participate with a table as a non-exhibitor.

GALA DINNER

The Conference Dinner will be held at the Laurenskerk. The dinner is included in the full student and non-student conference registration fees - you can purchase a guest ticket for your +1 to attend this event via the conference registration site. One-Day or Tutorial/Workshop ONLY Registrations do NOT include the dinner.

Tuesday | October 27, 2026 | 18:30 – 21:30

Location: Laurenskerk

Full Conference Registrations (IEEE Member, Society Member, Non-Member, Student Member, Student Non-Member) allow you to attend all sessions on Monday-Wednesday. Tutorials/Workshops on Sunday are an additional fee and are not included in the main conference registration.

	Sunday, October 25	Monday, October 26	Tuesday, October 27	Wednesday, October 28
07:00 - 07:30		Speakers' Breakfast	Speakers' Breakfast	Speakers' Breakfast
07:30 - 08:00				
08:00 - 08:30				
08:30 - 09:00	Tutorials/Workshops	Opening Session Plenary Speaker: Jos Benschop	Poster Session/Live Demos	IEEE Announcement Plenary Speaker: Ellis Meng
09:00 - 09:30				
09:30 - 10:00				
10:00 - 10:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30 - 11:00	Tutorials/Workshops	Technical Sessions	Sensors Council Announcement Plenary Speaker: Genki Yoshikawa	Poster Session/Live Demos
11:00 - 11:30				
11:30 - 12:00				
12:00 - 12:30	Lunch	Lunch/WiSe Panel	Lunch/YP Panel	Lunch/ILC Event
12:30 - 13:00				
13:00 - 13:30				
13:30 - 14:00	Tutorials/Workshops	Technical Sessions	Technial Sessions In-Conference Workshop: Sensors for Intelligent Robotic and Humanoid Systems (Van Oldenbarnevelt Room)	Technical Sessions
14:00 - 14:30				
14:30 - 15:00				
15:00 - 15:30	Coffee Break	Poster Session Sensorpreneur Pitch Coffee Break	Poster Session Coffee Break	Poster Session Coffee Break
15:30 - 16:00	<u>Tutorials/Workshops</u>	Technical Sessions	Technial Sessions In-Conference Workshop: Sensors for Intelligent Robotic and Humanoid Systems (Van Oldenbarnevelt Room)	Closing & Conference Awards
16:00 - 16:30				
16:30 - 17:00				
17:00 - 17:30			Industry Career Fair MYOSA Competition	
17:30 - 18:00		YP/WiSe/Industry Reception at Rotterdam City Hall		
18:00 - 18:30	Welcome Reception YP Poster Session			
18:30 - 19:00			Gala Dinner at Laurenskerk	
19:00 - 19:30				
19:30 - 20:00				
20:00 - 20:30				
20:30 - 21:00				
21:00 - 21:30				

The most up to date version of the program is online (<https://2026.ieee-sensorsconference.org/program/program-schedule>) or in the Conflux app.

AI-Driven Secure Sensor Systems: Federated Learning, Edge Intelligence, and Trustworthy IoT

Sun Oct 25, 8:30 – 12:00 · J.F. Staal

Speaker(s): Muhammad Zunnurain Hussain (Bahria University Lahore Campus Pakistan)

Analog vs. Digital In-Sensor Machine Learning: Fundamentals and Applications

Sun Oct 25, 8:30 – 10:00 · Mees I

Speaker(s): Marco Carminati (Politecnico di Milano)

Bioimpedance Analysis-Based Biosensors: Design Principles and Emerging Applications

Sun Oct 25, 8:30 – 10:00 · Penn II

Speaker(s): Pedro Bertemes-Filho (UDESC)

From Photon to Biochips: A New Frontier in Biomarker Detection

Sun Oct 25, 8:30 – 10:00 · Mees II

Speaker(s): Wei-Chuan Shih (University of Houston, USA)

Portable Biomagnetic Sensing Platforms for Healthcare, Wearables, and Human-Machine Interfaces: From PicoTesla Sensors to Scalable Systems

Sun Oct 25, 8:30 – 12:00 · Blue

Speaker(s): Hadi Heidari (Neuranics Limited); Siming Zuo (Neuranics Limited); Negin Ghahremani Arekhloo (Neuranics); Rasly Mahmoud (Neuranics, United Kingdom)

Putting image sensor development in perspective and lessons learned for sensor technology

Sun Oct 25, 8:30 – 17:00 · Leeuwen I and II

Speaker(s): Daniel McGrath (TechInsights); Jonathan Steckel (STMicroelectronics); Davide Marani (Sony)

Sunday Morning Coffee Break

Sun Oct 25, 10:00 – 10:30 · Lloyds Lobby

From Naïve Loops to FAIR Datasheets: Multi-Threaded Software for Reproducible Soft Tactile Sensor Characterization

Sun Oct 25, 10:30 – 12:00 · Penn II

Speaker(s): Matteo Lo Preti

From Sensor Measurements to Environment Perception: Occupancy Maps for Autonomous Driving and Robotics

Sun Oct 25, 10:30 – 12:00 · Mees I

Speaker(s): Ashish Pandharipande (NXP Semiconductors); Geethu Joseph (Delft-University-of-Technology)

Next-generation optical fiber sensing

Sun Oct 25, 10:30 – 12:00 · Mees II

Speaker(s): Joel Villatoro (Depto. Ing. Comunicaciones EHU)

Sunday Lunch

Sun Oct 25, 12:00 – 13:30 · Zaal Staal

AI-Augmented Electromagnetic Sensing: From Principles to Unobtrusive Biomedical and Industrial Intelligence

Sun Oct 25, 13:30 – 15:00 • Mees I

Speaker(s): Dr. Anwesha Khasnobish (Tata Consultancy Services Limited)

Fiber optic-based sensors for human health and safety: emerging trends and outlooks

Sun Oct 25, 13:30 – 17:00 • J.F. Staal

Speaker(s): Francesco Chiavaioli (National Research Council of Italy (CNR) - Institute of Applied Physics "Nello Carrara"); Paola Saccomandi (Politecnico di Milano); Stefania Campopiano (Università degli studi di Napoli "PARTHENOPE")

Multi-domain Sensing Principles for MEMS

Sun Oct 25, 13:30 – 15:00 • Penn II

Speaker(s): Appo van der Wiel (Melexis)

Sensing the City: Fibre-Optic DAS and AI for Smart Transportation

Sun Oct 25, 13:30 – 15:00 • Mees II

Speaker(s): Mona Jaber (QMUL); Peter Hayward (T2 Sensing)

Sunday Afternoon Coffee Break

Sun Oct 25, 15:00 – 15:30 • Lloyds Lobby

Hardware-Analytics Co-Design for Trust-Enhanced Gas Sensing

Sun Oct 25, 15:30 – 17:00 • Mees II

Speaker(s): Radislav Potyrailo (GE Vernova Advanced Research)

Multielectrode array sensing for interpretation of the neural activity in stem cells-derived neuronal organoids

Sun Oct 25, 15:30 – 17:00 • Penn II

Speaker(s): Yagmur Demircan Yalcin (Radboudumc)

Vibrational spectroscopy for sustainable sensing: the road to in situ detection

Sun Oct 25, 15:30 – 17:00 • Mees I

Speaker(s): Camilla Baratto (INO-CNR)

Welcome Reception/YP Poster Session

Sun Oct 25, 18:00 – 20:00 • Shipping, Exchange & Mercurius Hall

Opening Session/Plenary Speaker

Mon Oct 26, 8:30 – 10:00 · Rotterdam Hall 1 & 2

Chair(s): Stoyan Nihtianov (TU-Delft)

Optical Lithography

Plenary

Speaker(s): Jos Benschop (ASML)

Monday Morning Coffee Break

Mon Oct 26, 10:00 – 10:30 · Shipping, Exchange & Mercurius Hall

A11-A Biomedical Applications

Mon Oct 26, 10:30 – 12:00 · Van Oldenbarnevelt

Chair(s): André Eugenio Lazzaretti (Federal University of Technology-Paraná); Patrick French (TU Delft)

Contactless Respiration Rate Estimation from Smartphone Facial Video Using Encoder-Decoder and Rppg-Derived Respiratory Modelling

Paper ID 8645

Author(s): Vishal Singh Roha (Monash University); Rahul Ranjan (Monash University); Mehmet Yuce (Monash University)

Intelligent Algorithms Enabling Single Ultrasonic-Sensor-Based Arterial Dynamics Tracking: for Scalable Vascular-Ageing Assessment

Paper ID 8823

Author(s): Sujay Shanthakumar (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Gaadha Jeevan (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Amit K Gupta (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Mohammed Raiyyan (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Raj Kiran V (Indian Institute of Technology Madras); Jayaraj Joseph (Indian Institute of Technology Madras)

Speaker(s): Raj Kiran V (Indian Institute of Technology Madras)

Markerless Vascular Data Registration via Trajectory Shape Matching and Segmentation Guided Online Calibration

Paper ID 8754

Author(s): Junhao Zhao (Shanghao jiaotong university); Zecai Lin (Shanghai Jiao Tong University); Yun Zou (Shanghai Jiao Tong University); Weiqing Wei (Shanghai Jiao Tong University); Xinwu Lu (Shanghai Jiao Tong University); Anzhu Gao (Shanghai Jiao Tong University)

Speaker(s): Junhao Zhao (Shanghao jiaotong university)

MTE-Net: A Lightweight MLP-Transformer Ensemble for EEG Motor Imagery Classification

Paper ID 8958

Author(s): Zahra Alilou (Carleton University); Parand Ziaeefer (Carleton University); Marzieh Amini (Carleton University)

Speaker(s): Marzieh Amini (Carleton University)

A Broadband Microwave Dielectric-Fingerprinting Sensor for Non-Invasive Glucose Monitoring: Architecture and Human Feasibility Results

Paper ID 8838

Author(s): Masoud Baghelani (MedWatch Technologies Inc.); Alaa Alajmy (MedWatch Technologies Inc.); Ehsan Futuhi (MedWatch Technologies Inc.); Tejas Khare (MedWatch Technologies Inc.); Wael Hazin (MedWatch Technologies Inc.); Md Jamil Ur Rahman (MedWatch Technologies Inc.); Talat Syed (MedWatch Technologies Inc.); Andres Tovar (MedWatch Technologies Inc.); Khaja Pasha Shaik (MLR Engineering College); Aidan Schang (MedWatch Technologies Inc.); Christian Torres (MedWatch Technologies Inc.); Athar Mahmoudinejad (MedWatch Technologies Inc.); Pushkar Sabharwal (MedWatch Technologies Inc.); Michael Brougham (MedWatch Technologies Inc.); Mahziar Serri Mazandarani (MedWatch Technologies Inc.); Arsham Sarshogh (MedWatch Technologies Inc.); Gabriela Cordero (MedWatch Technologies Inc.); Bruce Matichuk (MedWatch Technologies Inc.); Peter E. Light (MedWatch Technologies Inc.); Mike E. Moore (MedWatch Technologies Inc.)

Speaker(s): Masoud Baghelani (MedWatch Technologies Inc.)

A1L-E Chemical, Electrochemical and Gas Sensors 6 (Option B)

Mon Oct 26, 10:30 – 12:00 · Mees II

Chair(s): Filiberto Ricciardella (TNO); Jamila Boudaden (Fraunhofer-Institut für Elektronische Mikrosysteme und Festkörpertechnologien EMFT)

Effect of Nanosheet Size on NO₂ Sensing Performance at Room Temperature

Paper ID 8630

Author(s): Ran Li (LPICM, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris); Elmehti Ould Maina (University Gustave Eiffel); Kassioqe Dembele (Ecole Polytechnique); Fatima Bouanis (University Gustave Eiffel)

Speaker(s): Ran Li (LPICM, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris)

Impedimetric Sensor for Oil Concentration Detecting in the Cold Rolling Steel process: a Laboratory Proof of Concept

Paper ID 8993

Author(s): Marcelo Marins (Santa Catarina State University); Pedro Bertemes-Filho (UDESC); Marcos Rebello (Santa Catarina State University)

Speaker(s): Pedro Bertemes-Filho (UDESC)

Nanostructured TiO₂ and TiS₂ Based Chemiresistive Sensors for Accurate Detection of α -Terpinene

Paper ID 9105

Author(s): Spoorti Mushannavar (Indian Institute of Technology Dharwad); Ruma Ghosh (Indian Institute of Technology Dharwad)

Speaker(s): Spoorti Mushannavar (Indian Institute of Technology Dharwad)

Battery-Free Wireless Electrochemical Ph Sensor for Intraoral Monitoring

Paper ID 9112

Author(s): Rong Fu (Indiana University Bloomington); Xinyu Zhang (Indiana University Bloomington); Ziliang Zhang (Indiana University Indianapolis); Leixin Ouyang (Indiana University Indianapolis); Tien-Min Gabriel Chu (Indiana University Indianapolis); Mark Cheng (Indiana University)

Concentration Measurement Technology for Ternary Gas Mixtures Using a Thermal Conductivity Gas Sensor

Invited Pre-Published Journal Paper

Paper ID 9129

Author(s): Shunsuke Akasaka (ROHM Co., Ltd.); Ken Nakahara (ROHM Co., Ltd.)

Speaker(s): Shunsuke Akasaka (ROHM Co., Ltd.)

Data-Driven Impedimetric Sensor for Senescent Fruits: a Case Study on Papaya Ripeness Classification

Paper ID 9147

Author(s): Avishek Adhikary (Indian Institute of Technology Bhilai); Yashasvi Saxena (IIT Bhilsa); Dibakar Roy (Indian Institute of Technology Bhilai); Chiranjib Ghosh (Indian Institute of Technology Bhilai)

Speaker(s): Avishek Adhikary (Indian Institute of Technology Bhilai)

A1L-G Microfluidic and Biosensor Systems

Mon Oct 26, 10:30 – 12:00 · Goudriaan I and II

Chair(s): Yoshikazu Hirai (Kyoto University); Massimo Mastrangeli (Delft University of Technology)

Bridging Organs on a Chip: Technologies for Monitoring and Multiplexing

Invited

Paper ID 9126

Author(s): Lauren Spoelstra (University of Twente); Jasper Rietveld (University of Twente); Joshua Loessberg-Zahl (University of Twente); Loes Segerink (University of Twente)

A Microfluidic Impedance Flow Cytometer Enabled by Ultra-Narrow and Stable 3D Hydrodynamic Focusing

Paper ID 8413

Author(s): Tingxuan Fang (Aerospace Information Research Institute, Chinese Academy of Sciences); Yimin Li (Aerospace Information Research Institute, Chinese Academy of...); Tianran Hu (Chinese Academy of Sciences); Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...); Xiaoye Huo (Aerospace Information Research Institute, Chinese Academy of...); Yi Zhang (Chinese Academy of Sciences); Jian Chen (Aerospace Information Research Institute, Chinese Academy of...)

Speaker(s): Tingxuan Fang (Aerospace Information Research Institute, Chinese Academy of Sciences)

A Stackable Centrifugal Microfluidic Chip for Whole Blood Multiplex Protein Testing

Paper ID 8158

Author(s): Yunhui Ouyang (Aerospace Information Research Institute, Chinese Academy of Sciences); Changding Li (Chinese Academy of Sciences); Hua Wei (Chinese Academy of Sciences); Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...); Nan Li (Aerospace Information Research Institute, Chinese Academy of...)

Speaker(s): Yunhui Ouyang (Aerospace Information Research Institute, Chinese Academy of Sciences)

Development of a Low Insertion Loss, High-Sensitivity Arrayed Flexural Plate Wave Sensing Chip for Cardiac Troponin I Detection

Paper ID 8381

Author(s): Chia-Hsu Hsieh (National Sun Yat-sen University); Chou Cheng-Chuan (National Sun Yet-Sen University); Le Lou (National Sun Yat-sen University); I-Yu Huang (National Sun Yat-sen University)

Speaker(s): Chia-Hsu Hsieh (National Sun Yat-sen University)

In Vitro and In Vivo Validation of a Wireless Intravesical Bladder Pressure Monitor

Paper ID 8950

Author(s): Reilly Burhanna (Case Western Reserve University); Tyler Tevis (Louis Stokes Cleveland Veterans Affairs Medical Center); Syed Hassan Ahmed Bukhari (Cleveland Clinic); Margot Damaser (Cleveland Clinic); Steve Majerus (Case Western Reserve University)

A1L-C Optical Sensors 1

Mon Oct 26, 10:30 – 12:00 · Diamond II

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas); Anna G. Mignani (CNR-Istituto di Fisica Applicata Nello Carrara Italy)

Compact CIS-on-Tip Endoscope for Fallopian Tube Imaging

Invited

Paper ID 8197

Author(s): Bernardo Does (University of Minho); José A. Rodrigues (University of Minho); Manuela P. Sá (University of Minho); José H. Correia (University of Minho); Marino J. Maciel (University of Minho)

Speaker(s): Bernardo Does (University of Minho)

Blind Source Separation of Polarimetric and Thermal Drifts in FSBS Fiber Gas Sensors

Paper ID 8043

Author(s): ALEKSANDER PATERNO (University of Valencia/Santa Catarina State University); Rafael Kingeski (Santa Catarina State University); Carlos Álvarez-Ocampo (ICMUV, University of Valencia); Jose Luis Cruz (ICMUV, University of Valencia); Antonio Díez (ICMUV, University of Valencia); Miguel V. Andrés (ICMUV, University of Valencia)

Speaker(s): ALEKSANDER PATERNO (University of Valencia/Santa Catarina State University)

Air-Induced Deactivation and Thermal Recovery of a Pt-CNTs Capillary FBG Hydrogen Sensor

Paper ID 8219

Author(s): Hongxiao Li (Wuhan University of Technology); Jixiang Dai (Wuhan University of Technology); Zhi Li; Minghong Yang (Wuhan University of Technology)

Experimental Characterisation of an Optical Tracking Sensor for Capsule Localisation in the Small Intestine

Paper ID 8448

Author(s): Farzaneh Baserisalehi (University of Canterbury); Ebubekir Avci (University of Canterbury); Ciaran Moore (University of Canterbury); David Thomas (Massey University); Christopher Hann (University of Canterbury); Muhammad Rehan (Al Ghazali University); Volker Nock (University of Canterbury)

Speaker(s): Farzaneh Baserisalehi (University of Canterbury)

Feasibility of Long Period Gratings in LuAG-Doped Optical Fibers for Low-Dose Clinical X-Ray Dosimetry

Paper ID 8688

Author(s): Marcelo Saito Nogueira (University of Limerick); Flavio Esposito (University of Naples Parthenope); Anubhav Srivastava (University of Naples Parthenope); Michal Kamrádek (Czech Academy of Sciences); Ondřej Podrázský (Czech Academy of Sciences); Stefania Campopiano (Università degli studi di Napoli "PARTHENOPE"); Andrei Stancalie (CETAL, National Institute for Laser, Plasma and Radiation Physics); Jan Mrázek (Czech Academy of Sciences); Agostino Iadicicco (University of Naples Parthenope); Peter Woulfe (Blackrock Health Group); Sean Gillespie (University Hospital Galway); Sinead O'Keeffe (University of Limerick)

Speaker(s): Marcelo Saito Nogueira (University of Limerick)

A1L-D Physical Sensors 1

Mon Oct 26, 10:30 – 12:00 · Mees I

Chair(s): Filipe Arroyo Cardoso (TU, Delft); Ensieh Hosseini (Durham University)

Leveraging Semiconductor Ecosystems to MEMS

Invited

Paper ID 9102

Author(s): Weileun Fang (National Tsing Hua University)

Nano-g Level Digital MEMS Seismometer for Geophysical Applications

Paper ID 8246

Author(s): Ruikun Li (Huazhong University of Science and Technology); Bingye Li (Huazhong University of Science and Technology); Xu Jin Ma (Huazhong University of Science and Technology); Jiao Xu (Huazhong University of Science and Technology); Huafeng Liu (Huazhong University of Science and Technology)

Fast Identification of Frequencies, Quality Factors and Mode-Split in Tri-Axis Monolithic Gyroscopes Without Self-Test Electrodes

Paper ID 8295

Author(s): Elena Stecconi (Politecnico di Milano); Philippe Robert (iNGage S.A.S.); Giacomo Langfelder (Politecnico di Milano)

Speaker(s): Elena Stecconi (Politecnico di Milano)

Drive-to-Drive and Drive-to-Sense Feedthrough Capacitances in MEMS Gyroscopes and Their Impact on Zero-Rate-Output Stability

Paper ID 8297

Author(s): Luca Pileri (Politecnico di Milano); Gabriele Gattiere (STMicroelectronics); Giacomo Langfelder (Politecnico di Milano); Paolo Frigerio (Politecnico di Milano); Luca Falorni (STMicroelectronics)

Speaker(s): Luca Pileri (Politecnico di Milano)

Cylindrical Waterflow Sensor with Corrugated Diaphragms Using Sampling Moiré Method

Paper ID 8621

Author(s): Takao Nakajima (Keio University); Takuto Kishimoto (University of Tokyo); Toshihiro Shiratori (Keio University); Kyota Shimada (School of Integrated Design Engineering, Graduate School of ...); Hidetoshi Takahashi (Keio University)

A1L-B Sensor Data Processing and AI 2: Health (Option B)

Mon Oct 26, 10:30 – 12:00 · Diamond I

Chair(s): Rolland Vida (Budapest University of Technology and Economics); Kianoush Rassels (TU Delft)

CouplingNet: a Physiologically Informed Multi-Task Framework for Efficient Multi-Parameter Sensing of Heart and Respiratory Rates from a Single PPG Sensor

Paper ID 9081

Author(s): Kawisara Ueafuea (Vidyasirimedhi Institute of Science and Technology (VISTEC)); Theerawit Wilaiprasitporn (Vidyasirimedhi Institute of Science and Technology, Sense AI...); Thitikorn Kaewlee (Vidyasirimedhi Institute of Science and Technology (VISTEC)); Pitipat Gumphusiri (Vidyasirimedhi Institute of Science and Technology (VISTEC)); Nattapong Jaimcharyatam (Chulalongkorn University); Busarakum Chaitusaney (Chulalongkorn University); Wanumaidah Saengmolee (Vidyasirimedhi Institute of Science and Technology (VISTEC))

Speaker(s): Theerawit Wilaiprasitporn (Vidyasirimedhi Institute of Science and Technology, Sense AI...)

Body Position Impact on Ballistocardiographic Waveforms and Heart Rate Detection

Paper ID 9089

Author(s): Jonas Sandelin (University of Turku); Pilvi Laine (University of Turku); Anni Halkilahti (University of Turku); Katri Karhinoja (University-of-Turku); Sepehr Seifizarei (University of Turku); Ismail Elnaggar (University of Turku); Yangyang Zhao (University of Turku); Olli Lahdenoja (University of Turku); Tero Koivisto (University of Turku); Matti Kaisti (University of Turku)

Speaker(s): Tero Koivisto (University of Turku)

A Real-Time Cross-Session EEG Based Biometric System Using Siamese EEGAuthNet and Triplet Manifold Alignment

Paper ID 9107

Author(s): Chetan Tanaji Rakshe (Indian Institute of Technology (BHU) Varanasi); Anchal Chaudhary (Indian Institute of Technology (BHU) Varanasi); Jac Fredo Agastinose Ronickom (Indian Institute of Technology (BHU) Varanasi)

Speaker(s): Chetan Tanaji Rakshe (Indian Institute of Technology (BHU) Varanasi)

DATG 2.0 Integrated Liquid Crystal Sensing Platform and tissue-Equivalent Phantom for high-Resolution thermovascular Imaging

Paper ID 9114

Author(s): Rosa Brancaccio (Department of Physics and Earth Sciences, University of Ferrara); Antonino Proto (Department of Neuroscience and Rehabilitation, University of Ferrara); Jacopo Altieri (Department of Physics and Earth Sciences, University of Ferrara); Giuseppe Mincoelli (Department of Architecture, University of Ferrara); Silvia Imbesi (Department of Architecture, University of Ferrara); Marcello Bonfè (Department of Engineering, University of Ferrara); Saverio Farsoni (Department of Engineering, University of Ferrara); Angelo Taibi (Department of Physics and Earth Sciences, University of Ferrara)

Speaker(s): Rosa Brancaccio (Department of Physics and Earth Sciences, University of Ferrara)

A11-H Sensor Phenomenology, Modeling and Evaluation 1

Mon Oct 26, 10:30 – 12:00 · Penn I

Chair(s): Charusluk Viphavakit (Chulalongkorn University)

Etch-Free Fiber Fabry-Perot Refractive Index Sensor

Invited

Paper ID 9119

Author(s): Sahar Karimian (Atlantic Technological University); Muhammad Mahmood Ali (Atlantic Technological University); Marion McAfee (Atlantic Technological University); Waqas Saleem (Technological University Dublin); Elfed Lewis (University of Limerick)

A Hybrid Photometric Stereo and Structured Light-Based Visuotactile Sensor for Accurate On-Site Surface Topography Measurement

Paper ID 8020

Author(s): Yen Hang Zhou (Tsinghua University); Tiemin Li (Tsinghua University); Yao Jiang (Tsinghua University)

Physical Model of Rayleigh Backscattering Under Dynamic Perturbations in Coherent Optical Time-Domain Reflectometry

Paper ID 8462

Author(s): Roman Ermakov (DTU); Juan M. Marin (Technical University of Denmark); Huwei Wang (Technical University of Denmark); Franceso Da Ros (Technical University of Denmark); Darko Žibar (Technical University of Denmark)

Reactive and Radiative Near-Field Radio Sensing of Internal Mechanical Motion

Paper ID 8612

Author(s): Anusha Muralidharan (Cornell University); Kapil Gangwar (Cornell University); Edwin Kan (Cornell University)

Multi-Objective Optimization of a Six-Axis FBG Force Sensor for Robotic Cochlear Implantation

Paper ID 8650

Author(s): huanghua Liu (上海交通大学); Gexiang Yang (Shanghai Jiao Tong University); Junhao Zhao (Shanghai jiaotong university); Zheng Xu (Shanghai Jiao Tong University); Anzhu Gao (Shanghai Jiao Tong University)

Speaker(s): huanghua Liu (上海交通大学)

A11-I Sensors Networks and IOT 1

Mon Oct 26, 10:30 – 12:00 · Penn II

Chair(s): Brendan O'Flynn (Tyndall-National-Institute); Richard Murray (Tyndall National Institute)

Bluetooth Channel Sounding-Assisted Millimeter-Wave Radar Cluster Selection for Indoor Positioning

Paper ID 8080

Author(s): Ayaka Sata (Mitsubishi Electric Corporation); Shunsuke Uehashi (Information Technology R&D Center, Mitsubishi Electric Corpo...); Shigenori Tani (Mitsubishi Electric Corporation)

Speaker(s): Ayaka Sata (Mitsubishi Electric Corporation)

Timing-Aware Acquisition for Sequential Readout of Distributed Hall-Sensor Nodes in Low-Field MRI

Paper ID 8577

Author(s): Marcel Ochsendorf (Fraunhofer-Institut für Digitale Medizin MEVIS); Kostiantyn Lavronenko (Fraunhofer Institute for Digital Medicine MEVIS); Felix Dahms (Fraunhofer Institute for Digital Medicine MEVIS); Marian Frei (Fraunhofer Institute for Digital Medicine MEVIS); Yannick Kuhl (Fraunhofer Institute for Digital Medicine MEVIS); Emilia Yin-Großmann (Fraunhofer Institute for Digital Medicine MEVIS); Volkmar Schulz (Fraunhofer Institute for Digital Medicine MEVIS)

Speaker(s): Marcel Ochsendorf (Fraunhofer-Institut für Digitale Medizin MEVIS)

UAV-UGV Cooperative Sensing for Improved Position Estimation in Automated Facilities

Paper ID 8804

Author(s): David Mueller (Ruhr-Universität Bochum); Gianluca Tallarico (Ruhr University Bochum); Raphael Dyrska (Ruhr University Bochum); Paul Glogowski (Ruhr University Bochum); Bernd Kühlenkötter (Ruhr-Universität Bochum, Lehrstuhl für Produktionssysteme (L...); Martin Mönnigmann (Ruhr University Bochum)

Speaker(s): David Mueller (Ruhr-Universität Bochum)

A Wireless Distributed Multi-Modal Synchronous Sensor Network for Predictive Maintenance Applications

Paper ID 8923

Author(s): Dennis Laurijssen (University of Antwerp); Rens Baeyens (CoSys-Lab, University of Antwerp); Walter Daems (Cosys-Lab, University of Antwerp); Jan Steckel (Cosys-Lab, University of Antwerp)

Speaker(s): Dennis Laurijssen (University of Antwerp)

A11-F Wearable Physiological Monitoring: Materials, Technology and Applications 2

Mon Oct 26, 10:30 – 12:00 · Leeuwen I and II

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY); Ajay Giri Prakash Kottapalli (University of Groningen)

Biogel-Interfaced MXene-Graphene Composite Paired Patches for Athlete Performance Tracking

Paper ID 8727

Author(s): HeeSoo Choi (Kwangwoon University); Gagan Bahadur Pradhan (Kwangwoon University); Safi Ahmed (Kwangwoon University); Jae Yeong Park (Kwangwoon University)

Speaker(s): HeeSoo Choi (Kwangwoon University)

Biotite Nanosheet-Engineered Printed Dry Electrodes for Low-Impedance EEG Sensing

Paper ID 8909

Author(s): PARAMITA KAR CHOUDHURY (Tata Consultancy Services); Rinku Paul (Indian Institute of Technology Kharagpur); Sumit Misra (Indian Institute of Technology Kharagpur); Arpan Pal (Tata Consultancy Services (TCS)); Chandra Sekhar Tiwary (Indian Institute of Technology Kharagpur); Rajdeep Banerjee (Indian Institute of Technology Kharagpur)

Speaker(s): PARAMITA KAR CHOUDHURY (Tata Consultancy Services)

A Wearable Eye Tracker with Transparent On-Lens Electrodes for Capacitive Gaze Sensing

Paper ID 8292

Author(s): Giulia Palmieri (DEIB - Politecnico di Milano); Alberto Pettenella (Luxottica); Luca Merigo (Luxottica); Marco Carminati (Politecnico di Milano)

Speaker(s): Giulia Palmieri (DEIB - Politecnico di Milano)

Investigating Thoracic Photoplethysmography: Wavelength, Sensor Geometry, Placement

Paper ID 8861

Author(s): Fabian Kabas (TU Wien); Matthias Schlögl (Technical University of Vienna); Schmid Ulrich (TU Wien)

Speaker(s): Fabian Kabas (TU Wien)

Mask-Integrated Flexible Dual Sensors for Real-Time Breath Monitoring

Paper ID 8242

Author(s): Hamid Nawaz (Khalifa University); Nadeem Tariq Beigh (Khalifa University); Ravi P. Pandey (Khalifa University); Shadi W. Hasan (Khalifa University); Nouha Alcheikh (Khalifa University)

Monday Lunch

Mon Oct 26, 12:00 – 13:00 · Shipping, Exchange & Mercurius Hall

WiSe Lunch - How to Let Go When Networking

Mon Oct 26, 12:00 – 13:00 · J.F. Staal

Speaker(s): Barry W. Fitzgerald (BW Science)

A2L-I Actuators, Energy and Powering Devices

Mon Oct 26, 13:00 – 14:30 · Penn II

Chair(s): Mark Cheng (Indiana University); Pai-Yen Chen (University of Illinois)

Towards Safe Wearable Electrohydraulic Soft Actuators: Effect of Insulating Materials on Actuation Performance and Reliability

Paper ID 8216

Author(s): Chinmay Gupta (University of Groningen); Chiti Belwal (University of Groningen); Shaokang Tao (University of Groningen); Ajay Giri Prakash Kottapalli (University of Groningen)

Speaker(s): Chinmay Gupta (University of Groningen)

Toward 3D Printable Non-Planar Electroadhesive Structures for Active Anchoring

Paper ID 8987

Author(s): Mostafa A. Atalla (University of Twente); Carol Derla (University of Twente); Pep Canyelles Pericàs (University of Twente); Gijs Krijnen (University of Twente)

Speaker(s): Carol Derla (University of Twente)

Laser-Induced Graphene Supercapacitors for Battery-Free Wireless Chemical Sensing

Paper ID 8245

Author(s): Johanna Zikulnig (Silicon Austria Labs GmbH); Lukas Neumaier (Silicon Austria Labs GmbH); Carolin Kollegger (Infineon Technologies Austria AG); Mani Teja Vijjapu (Silicon Austria Labs GmbH); Emily Bezerra Alexandre (Silicon Austria Labs GmbH); Thomas Herndl (Infineon Technologies Austria AG); Sabine Lengger (Silicon Austria Labs GmbH)

Internal Impedance Prediction for Triboelectric Nanogenerators Using Frequency-Sweep Physics-Informed Neural Networks

Paper ID 8611

Author(s): Abel Tshimbu (Memorial University of Newfoundland); Ting Zou (Memorial University); Lihong Zhang (Memorial University)

Speaker(s): Lihong Zhang (Memorial University)

Implementation of Temperature Compensation Layers in Surface Acoustic Wave Nebulization

Paper ID 8778

Author(s): Kaleb Sharrer (University of South Florida); Jacob Rowe (University of South Florida); Mojgan Jafaripirouz (University of South Florida); Theresa Evans-Nguyen (University of South Florida); Venkat Bhethanabotla (University of South Florida)

Speaker(s): Kaleb Sharrer (University of South Florida)

Superhydrophilic Zwitterionic Self-Assembled Monolayers for Surface Acoustic Wave Nebulization Mass Spectrometry

Paper ID 8320

Author(s): Kaleb Sharrer (University of South Florida); Mojgan Jafaripirouz (University of South Florida); Jacob Rowe (University of South Florida); Ryan Toomey (University of South Florida); Theresa Evans-Nguyen (University of South Florida); Venkat Bhethanabotla (University of South Florida)

Speaker(s): Kaleb Sharrer (University of South Florida)

A2L-F Circuits and Interfaces for Sensor Systems

Mon Oct 26, 13:00 – 14:30 · Leeuwen I and II

Chair(s): Hengky Chandralim (U.S. Air Force Institute of Technology)

Multimodal Ai Fusion for High-End Surveillance

Invited

Paper ID 9182

Author(s): Egor Bondarev (Eindhoven University of Technology)

Fast-Startup AC-Coupled Amplifier IC in 65nm CMOS for Low-Frequency Signal Measurement

Paper ID 8642

Author(s): Shlok Budhbhatti (Texas Tech University); Changzhi Li (Texas Tech University)

Speaker(s): Changzhi Li (Texas Tech University)

A 100 Hz-10 MHz Non-Faradaic CMOS EIS Sensor with a 128×128 Microelectrode Array

Paper ID 8866

Author(s): Jun-Seok Beom (Chungbuk National University); Hyunseo Shin (Chungbuk National University); Doohong Min (KAIST); Jungchul Lee (Korea Advanced Institute of Science and Technology); Jungkyu (Jay) Kim (University of Utah); NAMSEOG KIM (Chungbuk National University)

Speaker(s): Jun-Seok Beom (Chungbuk National University)

Robustness of Scaled Open/Load De-Embedding Procedure for AD5941-Based High-Impedance Measurements

Paper ID 8522

Author(s): Carmine Villani Delle Vergini (Sapienza University of Rome); Domenico Caputo (Sapienza University of Rome); Dipartimento di Ingegneria (Department of Engineering, University of Perugia)

A Wireless Sensing Interface Employing Multi-Phase Switching Operation for Passive Battery-Free Soil Moisture Sensing Application

Paper ID 8972

Author(s): Qiwu Zhang (University of Utah); Jacob Anderson (University of Utah); Sheng Ding (University of Utah); Shad Roundy (University of Utah); Kam K Leang (University of Utah); Cody Zesiger (Utah State University); Darrin J Young (University of Utah)

A2L-H Emerging Sensor Technologies and Applications 1

Mon Oct 26, 13:00 – 14:30 · Penn I

Chair(s): Gayathri Pillai (Indian Institute of Science, Bangalore); Rolland Vida (Budapest University of Technology and Economics)

Flexible Electrode Design Strategies for Electrophysiological Monitoring

Paper ID 8196

Author(s): Cole Onorati (University of Groningen); Charlotte Christina Roossien (University of Groningen); Natanael Gomes (University of Groningen); Mohsen Asadnia (Macquarie University); Ajay Giri Prakash Kottapalli (University of Groningen)

Speaker(s): Cole Onorati (University of Groningen)

Optical Sensor for Absolute 2-DOF Rotational Measurement Using Embedded AI

Paper ID 8572

Author(s): Massimiliano Filipozzi (University of Basel); Janick Bilang (University of Basel); Philippe Cattin (University of Basel)

Speaker(s): Massimiliano Filipozzi (University of Basel)

LF-DVS-BEGI: Event-Driven Monocular Sensor Architecture for Microsecond-Level 3D Perception

Paper ID 8533

Author(s): Xabier Iturbe (IKERLAN S COOP); Arne Erdmann (Raytrix GmbH); Carmen Sanchez (Ikerlan S. Coop); Carlos Valdespino (Ikerlan S. Coop); Ander Fernandez (Ikerlan S. Coop); Dylan Tomlinson (Ikerlan S. Coop)

Speaker(s): Xabier Iturbe (IKERLAN S COOP)

A Multilayer Printed Differential Microwave Sensor for Dielectric Sensing with Enhanced Quality Factor

Paper ID 8672

Author(s): S M Ishraqul Huq (McGill University); Gaozhi Xiao (National Research Council Canada); Sharmistha Bhadra (McGill University, Canada)

Speaker(s): S M Ishraqul Huq (McGill University)

A High-Frequency Parity Time Symmetric Sensing System Based on Tunnel Diodes

Paper ID 8643

Author(s): Yining Chong (Southeast University); Qing-An Huang (Key Laboratory of MEMS of the Ministry of Education, Southeast...); Lifeng Wang (Southeast University)

Speaker(s): Yining Chong (Southeast University)

Initial-Service Galileo HAS in Practice: Design and Field Evaluation of an Open-Source High-Precision GNSS Platform

Paper ID 8678

Author(s): Ciril Clerc (ETH Zürich); Julian Moosmann (ETH Zürich); Philipp Mayer (ETH Zürich); Michele Magno (ETH Zurich)

Speaker(s): Ciril Clerc (ETH Zürich)

A2L-G Microfluidics and Biosensors 1 (Option B)

Mon Oct 26, 13:00 – 14:30 · Goudriaan I and II

Chair(s): Luisa Petti (Free University of Bozen-Bolzano); Loes Segerink (University of Twente)

Label-Free Electrochemical Detection of Mucin in Urinary Extracellular Vesicles to Monitor High-Altitude Hypoxia Adaptation

Paper ID 9050

Author(s): Nusrat Praween (Indian Institute of Space Science and Technology, Thiruvananthapuram); Sunil Kumar (Indian Space Research Organisation Human Space Flight Centre); Palash Kumar Basu (Indian Institute of Space Science and Technology, Thiruvananthapuram)

Speaker(s): Nusrat Praween (Indian Institute of Space Science and Technology, Thiruvananthapuram)

A capillary-Driven Textile Electrochemical Device Enabling Rapid and Continuous Uric Acid Monitoring in Sweat

Paper ID 9054

Author(s): Toru Nohgi (Waseda University); Huizi Zhang (Waseda University); Qianxi Zhao (Waseda University); Alexander Sakae Kameoka (University of Sydney); Sirawit Sorrak (Waseda University); Ling Ding (Waseda University); Hiroshi Kawahira (Jichi Medical University); Jun Kameoka (Waseda University)

Speaker(s): Toru Nohgi (Waseda University)

Label-Free Chemiresistive Biosensor for Breast Cancer Specific Point Mutation Detection in BRCA-1 Gene

Paper ID 9080

Author(s): Dharmendra Singh (IIT Ropar); Muskan Sharma (IIT Ropar); Bodhisatwa Das (IIT Ropar); suryasnata tripathy (Indian Institute of Technology Ropar)

Speaker(s): suryasnata tripathy (Indian Institute of Technology Ropar)

Combined Urinary Prostate Cancer Risk Score Based on Levels of PCAT14, PCA3, SchLAP1 and TMPRSS2: Erg Biomarkers Detected Using Resistive Sensors

Paper ID 9106

Author(s): BOLIVIA KONTHOUJAM (IIT DHARWAD); Disha Acharya (Department of Biosciences and Bioengineering, IIT Dharwad, Karnataka); Shridhar C. Ghagane (Dr. Prabhakar Kore Basic Science Research Centre, J N Medical College, KLE Academy of Higher Education); Rajendra B. Nerli (Urinary Biomarkers Research Centre, KLES Dr. Prabhakar Kore Hospital & Medical Research, Belagavi.); Sudhanshu Shukla (Department of Biosciences and Bioengineering, IIT Dharwad, Karnataka); Ruma Ghosh (Indian Institute of Technology Dharwad)

Speaker(s): BOLIVIA KONTHOUJAM (IIT DHARWAD)

Antibody-Functionalized Polycaprolactone-Based EGFET Biosensor for Scalable, Non-Invasive Hormonal Analysis

Paper ID 9127

Author(s): Srishti Johri (Carleton University); Chloe Davidson (Carleton University); Ravi Prakash (Carleton University)

Gold Nanoparticle-Assisted Multiharmonic and Multivariate QCM Sensing of miRNA-21

Invited Pre-Published Journal Paper

Paper ID 9137

Author(s): Francesca Izzo (University of Bordeaux); Annesha Mazumder (IMS Lab, University of Bordeaux (CNRS UMR 5218)); Florence Poulletier de Gannes (Université de Bordeaux); Hamida Hallil (Bordeaux University)

Speaker(s): Francesca Izzo (University of Bordeaux)

A2L-C Optical Sensors 2

Mon Oct 26, 13:00 – 14:30 · Diamond II

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas); Enes Ataç (İzmir Institute of Technology)

SPAD ToF Array Reaching PPM-Level Relative Precision for Long-Distance Vibration Sensing

Paper ID 8065

Author(s): Yu-Cheng Wang (National Yang Ming Chiao Tung University); Tzu-Hsien Sang (National Yang Ming Chiao Tung University); Chia-Ming Tsai (National Chiao Tung University); Sheng-Di Lin (National Yang Ming Chiao Tung University)

Speaker(s): Yu-Cheng Wang (National Yang Ming Chiao Tung University)

KANJI-Based Markers for Accurate Displacement Measurement of Civil Infrastructures

Paper ID 8137

Author(s): Anju Hebiishi (Tokyo University of Science); Shien Ri (National Institute of Advanced Industrial Science and Technology); Shinji Ogihara (Tokyo University of Science)

Speaker(s): Anju Hebiishi (Tokyo University of Science)

Development of Large-Area Microspectrometer Sensor Scanning of CFRP Prepreg and Laminates

Paper ID 8177

Author(s): Yuchen Hsu (National Tsing Hua University); Mao Chen Chen (National Tsing Hua University); Chitsung Hong (Spectrochip.Inc); Hung-Wei Huang (National Taiwan University of Science and Technology); Cheng-Hao Ko (National Taiwan University of Science and Technology); Weileun Fang (National Tsing Hua University)

Speaker(s): Yuchen Hsu (National Tsing Hua University)

Biocompatible Soft Robot Instrumented with Optical Fiber Specklegram Sensor

Paper ID 8210

Author(s): Júlia de Lima (University of Campinas); David Brenken (McGill University); Audrey Sedal (McGill University); Eric Fujiwara (Universidade Estadual de Campinas)

Time Gated Coherent Laser Interrogation in a 2 km Fiber Optic Gyroscope

Paper ID 8430

Author(s): Rizwan Zahoor (CNR-INO, National Research Council, National Institute of Optics - Italy); Ferdinando D'Apice (Parthenope University); Marialuisa Capezzuto (National Research Council of Italy); Gianluca Gagliardi (National Research Council of Italy); Luigi Santamaria Amato (Agenzia Spaziale Italiana); Saverio Avino (CNR -INO, National Research Council, National Institute of Optics - Italy)

Speaker(s): Rizwan Zahoor (CNR-INO, National Research Council, National Institute of Optics - Italy)

Zero-Crossing-Based Displacement Sensing Under Weak-Feedback Based Self-Mixing Interferometry

Paper ID 8457

Author(s): Sabika Fatima (National University of Sciences and Technology); Noor Fatima (National University of Sciences and Technology); Olivier Bernal (LAAS-CNRS, University of Toulouse, Toulouse INP); Usman Zabit (National University of Sciences and Technology)

Speaker(s): Olivier Bernal (LAAS-CNRS, University of Toulouse, Toulouse INP)

A2L-D Physical Sensors 2

Mon Oct 26, 13:00 – 14:30 · Mees I

Chair(s): Patrick French (TU Delft); Gerald Gerlach (TU Dresden)

Dual-Mode Configurable Capacitive Proximity and 3-Axis Inductive Force Sensing via Interdigitated Spiral Array

Paper ID 8157

Author(s): Fuchi Shih (National Tsing Hua University); Mei-Feng Lai (National Tsing Hua University); Weileun Fang (National Tsing Hua University)

A Wide-Range Highly Sensitive Capacitive Tactile Sensor Based on Cavity-Induced Bending

Paper ID 8227

Author(s): Peng YuLian (University of Science and Technology of China); Zelong Li (University of Science and Technology of China); Jinhui Bin (University of Science and Technology of China); Yueyang Wang (USTC); Xinxin Chang (University of Science and Technology of China); Hongbo Wang (University of Science and Technology of China)

Speaker(s): Peng YuLian (University of Science and Technology of China)

A Flexible OTFT-Based Force Sensor Array for Tactile Artificial Skin

Paper ID 8768

Author(s): Antonello Mascia (University of Cagliari); Riccardo Collu (University of Cagliari); Luigi Raffo (University of Cagliari); Massimo Barbaro (Università degli Studi di Cagliari); Piero Cosseddu (University of Cagliari)

Biaxial Force Plate System with High Temporal Resolution Using Event-Based Vision Sensor and Sampling Moiré Method

Paper ID 9034

Author(s): Ibuki Shirokuni (Keio University); Toshihiro Shiratori (Keio University); Yukitake Nakahara (Keio University); Mai Kawamata (Keio University); Hidetoshi Takahashi (Keio University)

Pitot-Tube-Based Airspeed Sensor System for Seabird Biologging

Paper ID 8044

Author(s): Kyota Shimada (School of Integrated Design Engineering, Graduate School of ...); Takuto Kishimoto (University of Tokyo); Kazuki Harada (University of Tokyo); Leo Uesaka (University of Tokyo); Kentaro Sakamoto (University of Tokyo); Katsufumi Sato (University of Tokyo); Hidetoshi Takahashi (Keio University)
Speaker(s): Kyota Shimada (School of Integrated Design Engineering, Graduate School of ...)

Large-Range In-Line Resistive Pressure Sensing for Multi-Modal Microfluidic Sensors

Paper ID 8490

Author(s): Lars Holm (University of Twente); Remco G. P. Sanders (University of Twente); Jarno Groenesteijn (Bronkhorst High-Tech B.V.); Remco J. Wiegink (University of Twente); Joost Lötters (University of Twente); Dennis Alveringh (University of Twente)
Speaker(s): Lars Holm (University of Twente)

A2L-A Sensor Data Processing and AI 1: Physical (Option B)

Mon Oct 26, 13:00 – 14:30 · Van Oldenbarnevelt

Chair(s): Geethu Joseph (Delft-University-of-Technology)

Annular-Film Characterization Using a non-Intrusive Ring Conductance Sensor

Paper ID 8623

Author(s): Ana Luiza Beltrão Santana (UTFPR/NUEM); Natan Schieck Reginaldo (Federal University of Technology - Parana (UTFPR)); Jean Nakatu Longo (Universidade Tecnológica Federal Do Paraná & Nuem); Marcos Eduardo Pivaro Monteiro (UTFPR/NUEM); Moisés Neto (Universidade Tecnológica Federal do Paraná); Rigoberto Morales (UTFPR); Marco Da Silva (Johannes Kepler University Linz); Eduardo Dos Santos (Universidade Tecnológica Federal do Paraná)

Multi-Condition Crack Detection and Surface Assessment for Underwater Metal Structures Using Adaptive Vision Models

Paper ID 9041

Author(s): Mohammad Arif Khan (Indian Institute of Technology Bhilai); Sourav Roy (Indian Institute of Technology Bhilai); Kaushik Bandyopadhyay (Indian Institute of Technology Bhilai); Avishek Adhikary (Indian Institute of Technology Bhilai)
Speaker(s): Avishek Adhikary (Indian Institute of Technology Bhilai)

Multi Sensor Data Fusion for Multi-Parameter Decoupling of Optical Fiber Measurements in Nuclear Reactor Environments

Paper ID 9048

Author(s): Aabid Hassan Najar (Indian Institute of Technology Bombay); Siddhartha Duttgupta (Indian Institute of Technology Bombay)
Speaker(s): Aabid Hassan Najar (Indian Institute of Technology Bombay)

Efficient and Effective Ai Establishment Method for Object Recognition on Low-Response Force Sensors Through Data Augmentation

Paper ID 9065

Author(s): Meng-Hsuan Lin (National Tsing Hua University); Yu-Wen Chen (National Tsing Hua University); Cheng-Han Tsai (Industrial Technology Research Institute); Cheng-Yao Lo (National Tsing Hua University)
Speaker(s): Meng-Hsuan Lin (National Tsing Hua University)

Contribution Identification for Structural Rigidity and Material Property on Characteristic Advancements in Elastomeric Force Sensors with Porosity and nanoparticles

Paper ID 9066

Author(s): Fan-Wei Liao (National Tsing Hua University); Yu-Wen Chen (National Tsing Hua University); Cheng-Yao Lo (National Tsing Hua University)
Speaker(s): Cheng-Yao Lo (National Tsing Hua University)

Frequency Modulation Based Physical Reservoir Computing with Tunable MEMS Oscillator

Paper ID 9086

Author(s): Yu-Chi Chuang (National Yang Ming Chiao Tung University); Chih-Peng Liu (National Yang Ming Chiao Tung University); Hsiang-Chun Hsiao (National Yang Ming Chiao Tung University); Yi Chiu (National Yang Ming Chiao Tung University)

A2L-B Sensor Data Processing and AI 3: Chemical (Option B)

Mon Oct 26, 13:00 – 14:30 · Diamond I

Chair(s): Bérangère Lebental (Gustave Eiffel University)

Dynamic Multigas Differentiation Using a Temperature-Modulated Dielectric-Excitation Gas Sensor

Paper ID 8624

Author(s): Radislav Potyrailo (GE Vernova Advanced Research)

Photoacoustic Time-Frequency Analysis for Quantification of Coal Thermal Properties and its Classification to Spontaneous Combustion Susceptibility

Paper ID 9115

Author(s): Abhijeet Gorey (Tata Consultancy Services, Research); Pathikrit Gupta (TCS Research, Tata Consultancy Services); Subhasri Chatterjee (TCS Research); Aishani Basu (TCS Research); Deviprasad Mishra (IIT ISM Dhanbad); Chirabrata Bhaumik (TCS Research); Arpan Pal (Tata Consultancy Services (TCS))

Speaker(s): Abhijeet Gorey (Tata Consultancy Services, Research)

Electronic Nose-Based Assessment of Cardiovascular Disease Severity Using Blood Analysis

Paper ID 9116

Author(s): Antonio Vincenzo Radogna (University of Salento); Giulia My (CNR-IMM); Andrea Gaiardo (Bruno Kessler Foundation, Sensors and Devices Center); Giuseppe Grassi (Università del Salento); Matteo Valt (FBK); Simonetta Capone (CNR-IMM)

Dynamic Mode Decomposition of Photoacoustic Sensor Data for Blood Classification

Paper ID 9163

Author(s): ROBERTO GIOVANNI RAMIREZ-CHAVARRIA (UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO); Argelia Perez-Pacheco (UIDT, Hospital General de Mexico Dr. Eduardo Liceaga); Marco Polo Colin-Garcia (Univerisdad Nacional Autonoma de Mexico); Rosa Maria Quispe-Siccha (UIDT, Hospital General de Mexico Dr. Eduardo Liceaga)

Speaker(s): ROBERTO GIOVANNI RAMIREZ-CHAVARRIA (UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO)

A Microwave-Based Sensing Platform for Microplastic Detection and Quantification: a Machine Learning-Assisted Approach

Invited Pre-Published Journal Paper

Paper ID 9165

Author(s): Mateus Isaac Souza (São Paulo State University (Unesp)); Leonardo Tarczewski (University of São Paulo); Brian Nicholas Alves Rondon Lahr (University of São Paulo); Achilles Fontana Da Mota (University of Brasilia); Andrei Leitão (University of São Paulo); Vinicius Pepino (University of Sao Paulo); Ben-Hur Viana Borges (Universidade de São Paulo)

Speaker(s): Mateus Isaac Souza (São Paulo State University (Unesp))

A2L-E Wearable Physiological Monitoring: Materials, Technology and Applications 1

Mon Oct 26, 13:00 – 14:30 · Mees II

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY)

From Printed Functional Materials to Soft MEMS and Wearable Systems: Engineering Soft Wearable Sensors

Invited

Paper ID 9130

Author(s): Ajay Giri Prakash Kottapalli (University of Groningen)

Skin-Attachable Multi-Channel PZT Nanocomposite Sensor Array for Noise-Robust Voice and Swallowing Monitoring

Paper ID 8539

Author(s): Chan Hwa Hong (Electronics and Telecommunications Research Institute); Saerom Seo (Electronics and Telecommunications Research Institute); Yunjeong Kim (ETRI); Hanbit Jin (Electronics and Telecommunications Research Institute); Jeongnam Kim (Electronics and Telecommunications Research Institute); Hye Jin Kim (Electronics and Telecommunications Research Institute)

Speaker(s): Chan Hwa Hong (Electronics and Telecommunications Research Institute)

A Carbonized Mof-Decorated Nanofiber-Based Piezoresistive Sensor for Single-Site Pulse Arrival Time Measurement

Paper ID 8732

Author(s): TAEGWAN LEE (Kwangwoon University); Gagan Bahadur Pradhan (Kwangwoon University); Safi Ahmed (Kwangwoon University); Jae Yeong Park (Kwangwoon University)

Speaker(s): TAEGWAN LEE (Kwangwoon University)

3D Printed Architected Lattice Structures with Strain Sensing Function for Wearable Applications

Paper ID 8591

Author(s): Katarzyna Koziol (University of Glasgow); Morteza Amjadi Kolou (University of Glasgow)

Speaker(s): Katarzyna Koziol (University of Glasgow)

Finger Motion Monitoring Through the Encapsulation of Multicore Fiber Bragg Gratings in a Superelastic NiTi Tube

Paper ID 8578

Author(s): Eduarda Marinho (University of Aveiro); Ricardo Oliveira (University of Aveiro)

Speaker(s): Eduarda Marinho (University of Aveiro)

A3P-J Chemical, Electrochemical and Gas Sensors 4

Mon Oct 26, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

Chair(s): Alan O Riordan (Tyndall National Institute)

Peak-Selective Enhancement in the Electrochemistry of Etoposide Using Carboxylated MWCNT Films

Poster

Paper ID 8078

Author(s): Francesca Rodino (EPFL); Mattia Bartoli (Polytechnic University of Turin); Sandro Carrara (EPFL)

Speaker(s): Francesca Rodino (EPFL)

ppm-Level N₂O Detection with Sputtered SnO₂ MEMS Sensors: The Role of Surface Oxygen Species in Normal and Inverse Responses

Poster

Paper ID 8119

Author(s): Yoshiaki Sugizaki (Toshiba); Rai Shimono (Toshiba Corporation); Yasuhiko Nagamori (Toshiba Corporation); Yukio Hiraoka (Toshiba Corporation); Katsuya Yamamoto (Toshiba Corporation); Kengo Uchida (Toshiba Corporation); Yumi Hayashi (Toshiba Corporation); Hiroaki Yamazaki (Toshiba Corporation)

Speaker(s): Yoshiaki Sugizaki (Toshiba)

SnO₂ Nanowires Gas Sensing with Thermal-Optical Excitation

Poster

Paper ID 8463

Author(s): Florentyna Sosada-Ludwikowska (Materials Center Leoben Forschung GmbH); Larissa Egger (Materials Center Leoben Forschung GmbH); Anton Köck (Materials Center Leoben Forschung GmbH); Olga Casals (Universitat de Barcelona); Juan Daniel Prades (Technische Universität Braunschweig)

Speaker(s): Florentyna Sosada-Ludwikowska (Materials Center Leoben Forschung GmbH)

An Ethyl Cellulose Platform Functionalized with Olive Pomace-Derived Biochar: Sustainable Screen-Printed Electrodes Based Sensors

Poster

Paper ID 8496

Author(s): Elena Palmieri (National Research Council of Italy); Rocco Cancelliere (Italian National Agency for New Technologies, Energy and Sustainable Economic Development); Luca Montaina (National Research Council of Italy); Francesco Maita (National Research Council of Italy); Luca Maiolo (National Research Council of Italy)

Speaker(s): Elena Palmieri (National Research Council of Italy)

High-Q Pd-Functionalized AlN Laterally Vibrating Resonators for Regenerable Hydrogen Sensing

Poster

Paper ID 8215

Author(s): Gaia Giubilei (Northeastern University); Farah Ben Ayed (Northeastern University); Zhenyun Qian (Northeastern University); Pietro Simeoni (Northeastern University); Matteo Rinaldi (Northeastern University)

Speaker(s): Gaia Giubilei (Northeastern University)

U-Shaped Electrolyte-Gated Graphene Field-Effect Transistors for Label-Free Biosensing of Cortisol

Poster

Paper ID 8249

Author(s): Ksenija Arslanova (University of the Bundeswehr Munich); Tanja Stimpel-Lindner (University of the Bundeswehr Munich); Sebastian Hauk (Friedrich-Alexander-Universität Erlangen-Nürnberg); Kathrin Knirsch (Friedrich-Alexander-Universität Erlangen-Nürnberg); Andreas Hirsch (Friedrich-Alexander-Universität Erlangen-Nürnberg); Kristiina Iljin (VTT Technical Research Centre of Finland); Tarja Nevanen (VTT Technical Research Centre of Finland); Georg Duesberg (University of the Bundeswehr Munich); Bajramshahe Shkodra (Sensing Technology Laboratory, Libera Università di Bolzano)

Speaker(s): Bajramshahe Shkodra (Sensing Technology Laboratory, Libera Università di Bolzano)

Quartz Cantilever Resonator Enhanced Light-Induced Thermoelastic Spectroscopy for Carbon Dioxide Detection

Poster

Paper ID 8408

Author(s): Yawen Zheng (Tianjin University); yujie wei (Tianjin University); Boyi Wang (Tianjin University); Hao Zhang (Tianjin University); Weiwei Cui (Tianjin University)

Speaker(s): yujie wei (Tianjin University)

Gallic Acid as a Natural Phenolic Substrate for Electrochemical H₂O₂ Sensing

Poster

Paper ID 8665

Author(s): Zina Fredj (Free University of Bolzano); Giulia Elli (Free University of Bozen-Bolzano); Pietro Ibba (Free University of Bozen-Bolzano); Luisa Petti (Free University of Bozen-Bolzano); Valerio Francesco Annese (Italian Institute of Technology)

Speaker(s): Zina Fredj (Free University of Bolzano)

Eco-Friendly Pt Functionalization of Graphene-Based Gas Sensors for Enhanced Ammonia Sensing

Poster

Paper ID 8771

Author(s): Mudassir Husain (Delft University of Technology); Shatavisha Biswas (TU Delft); Yukun Lian (TU Delft); Sten Vollebregt (TU-Delft)

Speaker(s): Mudassir Husain (Delft University of Technology)

Spark-Ablation Engineering of Porous La₂O₃ Nanostructures for Ethanol Gas Sensing

Poster

Paper ID 8818

Author(s): Chethan Basavalingappa (IM2NP, CNRS, Aix-Marseille University); Nigel Rising (VSParticle BV); Carine Perrin-Pellegrino (IM2NP, CNRS, Aix-Marseille University); Victoria Shalabaeva (VSParticle B.V.); Leandro Sacco (VSParticle B.V.); Sandrine Bernardini (IM2NP, CNRS, Aix-Marseille University)

Speaker(s): Sandrine Bernardini (IM2NP, CNRS, Aix-Marseille University)

Platinum Fractal Modified Microneedle Electrode Array for Transdermal Uric Acid Sensing

Poster

Paper ID 8120

Author(s): Mufeeda Mundummal (King Abdullah University of Science and Technology); Abdullah Bukhamsin (King Abdullah University of Science and Technology); Meshary Altheibany (King Abdullah University of Science and Technology); Khaled Nabil Salama (King Abdullah University of Science and Technology)

Speaker(s): Mufeeda Mundummal (King Abdullah University of Science and Technology)

Dual-Resonance-Enhanced Photoacoustic Spectroscopy with a Bimorph Piezoelectric Microphone Array for ppb-Level Gas Sensing

Poster

Paper ID 8375

Author(s): Boyi Wang (Tianjin University); yujie wei (Tianjin University); Yawen Zheng (Tianjin University); Lei Yin (Tianjin University); Yunchao Qi (Tianjin University); Wenhao Li (Tianjin University); Hao Zhang (Tianjin University); Weiwei Cui (Tianjin University)

Speaker(s): Wenhao Li (Tianjin University)

Validation of the Deep Nose System for Methamphetamine Detection Under Realistic Logistics-Environment Conditions

Poster

Paper ID 8480

Author(s): Yongwon Jang (Electronics and Telecommunications Research Institute (ETRI)); Hyung Wook Noh (Electronics and Telecommunications Research Institute); Hwin Dol Park (Electronics and Telecommunications Research Institute); Kwang Hyo Chung (Electronics and Telecommunications Research Institute); CHANG GEUN AHN (ETRI)

Speaker(s): Yongwon Jang (Electronics and Telecommunications Research Institute (ETRI))

Multi-Arm Peg Hydrogels for Electrochemical Aptamer Sensing of Tumor Necrosis Factor-Alpha

Poster

Paper ID 8606

Author(s): Celine Coopmans (KU Leuven); Olivier Deschaume (Katholieke Universiteit Leuven); Patrick Wagner (Katholieke Universiteit Leuven); Nicolas Verhaert (Katholieke Universiteit Leuven); Carmen Bartic (Katholieke Universiteit Leuven)

Speaker(s): Celine Coopmans (KU Leuven)

A3P-K Data Processing and AI for Sensor Applications 1

Mon Oct 26, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Ronnier Frates Rohrich (Federal University of Technology – Paraná (UTFPR))

GraphSAGE-Based Unsupervised Domain Adaptation Method for HFCT Partial Discharge Signal Classification

Poster

Paper ID 8079

Author(s): Huanyu Shi (Huazhong University of Science and Technology); Xinyao Nie (Huazhong University of Science and Technology); Yong Yang (Huazhong University of Science and Technology)

Speaker(s): Huanyu Shi (Huazhong University of Science and Technology)

Robust Prototypical Networks for Few-Shot Sensor Fault Diagnosis

Poster

Paper ID 8115

Author(s): Mohammed Ayalew Belay (Simula UiB AS); Amirshayan Haghipour (Norwegian University of Science and Technology); Pierluigi Salvo Rossi (Norwegian University of Science and Technology)

Speaker(s): Amirshayan Haghipour (Norwegian University of Science and Technology)

Design of a Flat-LTD Event-Driven Spiking Neural Network for Direction-Selective Sensing

Poster

Paper ID 8168

Author(s): Daiki Sato (Aoyama gakuin University); Yasufumi Yokoshiki (Aoyama Gakuin University)

Speaker(s): Daiki Sato (Aoyama gakuin University)

Confidence-Guided Vibration-to-Acoustic Distillation for Bottle Classification in Recycling

Poster

Paper ID 8287

Author(s): Junfu Zhang (Friedrich-Alexander-Universität Erlangen-Nürnberg); Yongxu Ren (Friedrich-Alexander-Universität Erlangen-Nürnberg); Felix Deichsel (Friedrich-Alexander-Universität Erlangen-Nürnberg); Jürgen Seiler (Friedrich-Alexander-Universität Erlangen-Nürnberg); Andre Kaup (Friedrich-Alexander-Universität Erlangen-Nürnberg); Philipp Beckerle (Friedrich-Alexander-Universität Erlangen...)

Speaker(s): Junfu Zhang (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Noise-State Conditioned Learnable Wavelet Mamba Network for Mud-Pulse Pressure Signal Denoising

Poster

Paper ID 8363

Author(s): RUILIN WANG (Zhejiang University); Haibin Han (Zhejiang University); Jiaxun Lu (Zhejiang University); Yan Wei (Zhejiang University); Fengzhong Qu (Zhejiang University); Xingbin Tu (Ocean College, Zhejiang University)

Speaker(s): RUILIN WANG (Zhejiang University)

Pulsed Coherent Radar-Based Conveyor-Belt Anomaly Detection with Subspace Clutter Filtering

Poster

Paper ID 8436

Author(s): Linus Ghatnekar Nilsson (Lund University); Fredrik Tufvesson (Lund University)

Speaker(s): Linus Ghatnekar Nilsson (Lund University)

Are Time-Series Foundation Models Ready for E-Nose Data? an Empirical Assessment of Their Embeddings

Poster

Paper ID 8598

Author(s): Taeyeong Choi (Kennesaw State University); Mohammed Kamruzzaman (University of Illinois Urbana-Champaign)

Speaker(s): Taeyeong Choi (Kennesaw State University)

Self-Supervised Pre-Training and Hand-Crafted Representations for Wearable Activity Recognition

Poster

Paper ID 8649

Author(s): Gustavo Tironi (Fundação Getulio Vargas); Joana Nascimento Fontes (Fundação Getulio Vargas); Gabriel Bittencourt Dias (Fundação Getulio Vargas); Arthur de Assis Sousa (Fundação Getulio Vargas); Rafael de Pinho Andre (Fundação Getulio Vargas)

Speaker(s): Gustavo Tironi (Fundação Getulio Vargas)

A Physical Reservoir Computer Based on Laser-Induced Graphene for E-Nose Applications

Poster

Paper ID 8800

Author(s): Anahita Oliae (Simon Fraser University); Ethan Lin (Simon Fraser University); Behraad Bahreyni (Simon Fraser University)

Speaker(s): Anahita Oliae (Simon Fraser University)

Improving RUL Prediction of p-GaN HEMTs via Exponential Look-Back Sampling

Poster

Paper ID 8896

Author(s): Jiaqi Liu (Signal Processing Systems, Delft University of Technology); Shuoyan Zhao (Delft University of Technology); Andrea Natale Tallarico (ARCES, University of Bologna); Maurizio Millesimo (ARCES, University of Bologna); Vladislav Volosov (ARCES, University of Bologna); Raj Thilak Rajan (Delft university of Technology); Justin Dauwels (Delft University of Technology)

Speaker(s): Shuoyan Zhao (Delft University of Technology)

CubeSat Telemetry Anomaly Detection on Ultra-Low-Power MCUs

Poster

Paper ID 8934

Author(s): Luigi Capogrosso (Interdisciplinary Transformation University of Austria); Michele Magno (ETH Zurich)

Speaker(s): Michele Magno (ETH Zurich)

Multi-Phase Spectral Feature Extraction and Lightweight Machine Learning System for Induction Motor Defect Diagnosis on Resource-Constrained Sensors

Poster

Paper ID 8983

Author(s): Leonardo Santana (Federal University of Technology - Paraná); Narco Maciejewski (Federal University of Technology - Paraná); Uilian José Dreyer (UTFPR/FUNTEF - 02.032.297-0001-00); André Eugenio Lazzaretti (Federal University of Technology-Paraná); Guilherme Bordim (Federal University of Technology - Paraná); José Jair Alves Mendes Júnior (Federal University of Technology-Paraná)

Speaker(s): Uilian José Dreyer (UTFPR/FUNTEF - 02.032.297-0001-00)

A3P-M Microfluidic Devices and Biosensing Technologies

Mon Oct 26, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Yoshikazu Hirai (Kyoto University); Massimo Mastrangeli (Delft University of Technology)

AI-Assisted and Gaussian-Pinch Based Droplet Splitting on Optoelectrowetting Chip

Poster

Paper ID 8085

Author(s): Junyan Tian (Fudan University); Gaifang Chen (Fudan University); Enqing Liu (Fudan University); Jia Zhou (Fudan University)

Speaker(s): Junyan Tian (Fudan University)

Sustainable Paper Dual-Metabolite Sensor Enabled by a Natural Phenolic Chromogenic System

Poster

Paper ID 8186

Author(s): Shujun Tian (University of Glasgow); Jinghong Lin (University of Glasgow); Beatriz Gonzalez Carmona (University of Glasgow); Haotian Chen (University of Glasgow); David Cumming (University of Glasgow); Valerio Francesco Annese (Italian Institute of Technology); Chunxiao Hu (University of Glasgow)

Speaker(s): Beatriz Gonzalez Carmona (University of Glasgow)

Precise Mixing of Reagents in Lab-on-Chip Devices for Environmental Sensing

Poster

Paper ID 8383

Author(s): Lucas Holtorf (Kiel University); Igor Titov (Kiel University); Mirjam Poschmann (Kiel University); Martina Gerken (Kiel University)

Speaker(s): Lucas Holtorf (Kiel University)

Effect of Electrode Geometry and Oil Encapsulation on the Reliability of a Composite Silicon-Based Dielectric Stack for EWOD Devices

Poster

Paper ID 8431

Author(s): Mukesh Pokala (Fondazione Bruno Kessler); Andrea Adami (Fondazione Bruno Kessler); Alvise Bagolini (Fondazione Bruno Kessler); Maria Fiorella Pantano (University of Trento); Leandro Lorenzelli (Fondazione Bruno Kessler); Andrea Spanu (Scuola Universitaria Superiore IUSS Pavia); Davood Hatami (University School for Advanced Studies IUSS Pavia); Teferi Sitotaw Yallew (Fondazione Bruno Kessler)

Speaker(s): Mukesh Pokala (Fondazione Bruno Kessler)

Detection of Staphylococcus Aureus Using Quorum-Sensing Peptide-Based Optical Biosensor

Poster

Paper ID 8489

Author(s): Lekhashree L K (Indian Institute of Technology Bombay); Suparna Mukherji (Indian Institute of Technology Bombay); Soumyo Mukherji (Indian Institute of Technology Bombay)

Speaker(s): Lekhashree L K (Indian Institute of Technology Bombay)

A Portable EWOD-LAMP System with Ring-Segment Electrodes-Enhanced Mixing for Rapid Colorimetric Salmonella Detection

Poster

Paper ID 8695

Author(s): Caiqin Zhao (Tianjin University); Yafeng Zhang (Tianjin University); Dachao Li (State Key Laboratory of Precision Measurement Technology and...); Xiaoping Li (Tianjin University)

Speaker(s): Xiaoping Li (Tianjin University)

Monday Afternoon Coffee Break

Mon Oct 26, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

A3P-O Option B Papers (I)

Mon Oct 26, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Gijs Krijnen (University of Twente)

Multi-Channel Wireless Driving of an Untethered Film Robot Based on Kinetic Electronics for Sensor-Actuator Platforms

Poster

Paper ID 9046

Author(s): Yuta Fukuda (Kyushu university); Yuzan Ninomiya (Kyushu University); Hayashi Kenshi (Kyushu University); Fumihiro Sassa (Kyushu University)

Speaker(s): Yuzan Ninomiya (Kyushu University)

Experimental Characterization of a Nonlinear Electrostatic-Capacitive MEMS Resonator Featuring 1:2 Internal Resonance

Poster

Paper ID 9060

Author(s): Alessandro Nastro (Università degli Studi di Brescia); Marco Zini (Università di Brescia); Pierpaolo Belardinelli (Polytechnic University of Marche); Francesco Clementi (Polytechnic University of Marche); Paola Russo (Polytechnic University of Marche); Luca Bastianelli (Polytechnic University of Marche); Luca Rosafalco (Politecnico di Milano); Teng Ma (Politecnico di Milano); Attilio Frangi (Politecnico di Milano); Marco Ferrari (Università degli Studi di Brescia)

Speaker(s): Alessandro Nastro (Università degli Studi di Brescia)

Lightweight Proprioceptive Contact Detection for Wheeled-Quadruped Robots Under Non-Periodic Gaits

Poster

Paper ID 9092

Author(s): Ma zhi (Nanjing University of Science Technology); Gu Chengjie (Nanjing University of Science Technology); Zhou Shichao (Nanjing University of Science Technology); Li Ruixuan (Nanjing University of Science Technology); Chen Lingkun (Nanjing University of Science Technology); Wang Yulin (Nanjing University of Science Technology)

Speaker(s): Ma zhi (Nanjing University of Science Technology)

Galvanomagnetic Transport in Magnetic Sensors Reinterpreted Using Two Instead of Three Kinetic Coefficients

Invited Pre-Published Journal Paper

Poster

Paper ID 9135

Author(s): Oliver Paul (IMTEK, University of Freiburg)

Speaker(s): Oliver Paul (IMTEK, University of Freiburg)

A Delta-Based SAR ROIC for Low-Voltage Wide-Input-Range Gas Sensor Readout

Poster

Paper ID 9138

Author(s): Soon-Kyu Kwon (Seoul National University of Science and Technology / Department of Semiconductor Engineering); Jun-Nyeong Kim (Seoul National University of Science and Technology); Hyeon-June Kim (Seoul National University of Science and Technology)

Speaker(s): Soon-Kyu Kwon (Seoul National University of Science and Technology / Department of Semiconductor Engineering)

Novel Multiple Moving Membrane Micromachined Ultrasonic Transducers with Bilateral Anchor Boundary Configurations

Poster

Paper ID 9171

Author(s): Pavithra Munirathinam (University of Windsor); Haleh Nazemi (University of Windsor); Arezoo Emadi (University of Windsor)

Speaker(s): Arezoo Emadi (University of Windsor)

A3P-N Sensor Calibration, Compensation, and Reliability

Mon Oct 26, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Geethu Joseph (Delft-University-of-Technology)

Multi-Point Thermal-State Vector Compensation for Temperature Drift in a Quartz Resonant MEMS Accelerometer

Poster

Paper ID 8059

Author(s): Hong Xue (Xi'an Jiaotong University); Xinfu Shan (Xi'an Jiaotong University); Shengxiang Zhou (Xi'an Jiaotong University); Ai Jiabin (Xi'an Jiaotong University); Cun Li (Xi'an Jiaotong University); Yulong Zhao (Xi'an Jiaotong University, State Key Laboratory for Manufact...)

Speaker(s): Shengxiang Zhou (Xi'an Jiaotong University)

Sparse-Sensor Grey-Box Thermal Compensation of Fiber-Optic Gyroscope Bias Drift

Poster

Paper ID 8148

Author(s): Pedro Bossi Nunez (Polytechnic University of Bari); Ludovico Dindelli (Polytechnic University of Bari); Teresa Natale (Polytechnic University of Bari); Francesco Dell'Olio (Polytechnic University of Bari)

Speaker(s): Pedro Bossi Nunez (Polytechnic University of Bari)

Lollypop: Camera-to-Motion-Capture Calibration Verification with a Reference Target

Poster

Paper ID 8224

Author(s): Tianyi Liu (Meta); Kevin Harris (Meta); Mihika Dave (Meta); Kun He (Meta)

Speaker(s): Tianyi Liu (Meta)

Knowledge-Driven Adaptive Near-Field EMI Scanning for PCBA Fault Detection in Remanufacturing

Poster

Paper ID 8836

Author(s): Carolin Lange (Karlsruhe Institut of Technology); Johannes Buchholz (Karlsruhe Institute of Technology); Benedict Franzheim (Karlsruhe Institute of Technology); Gisela Lanza (Karlsruhe Institute of Technology)

Speaker(s): Carolin Lange (Karlsruhe Institut of Technology)

Single Bit Correction of Radiation-Induced Soft Errors in Integrated Sensors

Poster

Paper ID 8513

Author(s): Matheus Minelli de Carvalho (Telecom Paris); Benjamin Cheymol (CNRS National Institute of Nuclear and Particle Physics IN2P3); Lirida Naviner (Telecom Paris); Rodrigo Possamai Bastos (Université Grenoble Alpes)

Speaker(s): Matheus Minelli de Carvalho (Telecom Paris)

A3P-L Sensor Phenomenology, Modeling and Evaluation 3

Mon Oct 26, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Charusluk Vipavakit (Chulalongkorn University)

Model-Based Tolerance Analysis of an Off-Axis Magnetic Angle Sensor

Poster

Paper ID 8200

Author(s): Jie Zhou (Schaeffler Automotive Buehl GmbH & Co. KG); Wai-Wai Buchet (Schaeffler Automotive Buehl GmbH & Co. KG); Florian Zeller (Schaeffler Automotive Buehl GmbH & Co. KG); Joerg Merkle (Schaeffler Automotive Buehl GmbH & Co. KG)

Speaker(s): Jie Zhou (Schaeffler Automotive Buehl GmbH & Co. KG)

Open-Source Ray Tracing for Virtualized Environment Radar Sensing in Mobile Robotics

Poster

Paper ID 8275

Author(s): Julian Ledderboge (Fraunhofer IEM); Christian Henke (Fraunhofer Institute for Mechatronic Systems Design IEM); Ansgar Trächtler (Heinz Nixdorf Institute)

Speaker(s): Julian Ledderboge (Fraunhofer IEM)

A Frequency-Tunable Slotted Magnetron Resonator with Asymmetrically Distributed Loop-Gap Electrodes for Rb Atomic Clocks

Poster

Paper ID 8376

Author(s): Xue Zhang (Dalian University of Technology); Yangzhen Liu (Dalian University of Technology); Wenjing Xu (Dalian University of Technology); Jingjie Li (Dalian University of Technology)

Speaker(s): Jingjie Li (Dalian University of Technology)

Mechanistic Insights Into Raw Impedance Profiles of Hydrodynamic Focusing-Based Microfluidic Impedance Flow Cytometry via Moving Mesh Simulations

Poster

Paper ID 8446

Author(s): Tianran Hu (Chinese Academy of Sciences); Tingxuan Fang (Aerospace Information Research Institute, Chinese Academy of Sciences); Mingyue Liu (Chinese Academy of Sciences); Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...); Xiaoye Huo (Aerospace Information Research Institute, Chinese Academy of...); Bo Chen (Chinese Academy of Sciences); Yi Zhang (Chinese Academy of Sciences); Jian Chen (Aerospace Information Research Institute, Chinese Academy of...)

Speaker(s): Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...)

Large Array of Coupled Microelectromechanical Sensors with Upto 20 Resonators

Poster

Paper ID 8486

Author(s): Bhaskar Choubey (Universität Siegen); Jingjing Liu (Sun Yat-sen University); Guowei Tao (University of Siegen)

Speaker(s): Bhaskar Choubey (Universität Siegen)

Start-Up Correction for NDIR Gas Sensors Using Approximate Maximum a Posteriori Estimation

Poster

Paper ID 8516

Author(s): Gustav Bohlin (KTH Royal Institute of Technology); Cheng Yang (KTH Royal Institute of Technology); Henrik Rödjegård (SenseAir AB); Tobias Oechtering (KTH Royal Institute of Technology)

Speaker(s): Gustav Bohlin (KTH Royal Institute of Technology)

Macromodeling of a MEMS Thermopile Vacuum Gauge via POD Order Reduction and State-Space

Poster

Paper ID 8530

Author(s): Haodong Zhang (Key Laboratory of MEMS of the Ministry of Education); Jun-Jie Wen (Southeast University); Zai-Fa Zhou (Key Laboratory of MEMS of the Ministry of Education)

Speaker(s): Haodong Zhang (Key Laboratory of MEMS of the Ministry of Education)

TCAD-Coupled Predictive SPICE Simulation Based Design for High Dynamic Range SPAD Pixels

Poster

Paper ID 8549

Author(s): Patryk Maciążek (University of Glasgow); Davide Berretta (Polytechnic University of Milan); Isobel Nicholson (STMicroelectronics R&D, Ltd); Bastien Mamdy (STMicroelectronics Crolles 2 SAS); Jean-Robert Manouvrier (STMicroelectronics Crolles 2 SAS); Denis Rideau (STMicroelectronics Crolles 2 SAS); Filip Kaklin (STMicroelectronics R&D, Ltd); Sofia Perinelli (STMicroelectronics R&D, Ltd); Sara Pellegrini (STMicroelectronics); Vihar Georgiev (University of Glasgow); Mohammed Al-Rawhani (STMicroelectronics R&D, Ltd)

Speaker(s): Sara Pellegrini (STMicroelectronics)

GO/SnO₂ Nanocomposite-Functionalized Optical Fiber Probes for Enhanced Bioimaging

Poster

Paper ID 8589

Author(s): Hanlin Jiang (Nottingham Trent University); Kartikey Chavan (Nottingham Trent University); Jiaying Sun (Nottingham Trent University); Carole C. Perry (Nottingham Trent University); Xianfeng Chen (Nottingham Trent University)

Speaker(s): Kartikey Chavan (Nottingham Trent University)

Two-Stage Regression-Based Estimation of Breath-Related VOC Concentrations from Mixed-Gas Sensor Responses

Poster

Paper ID 8652

Author(s): Maeva Ramamonjy-Rambo (École Supérieure d'Électronique de l'Ouest); Sirada Janjaochay (Chulalongkorn University); Wisarn Patchoo (Bangkok University)

Speaker(s): Wisarn Patchoo (Bangkok University)

Modeling and Optimization of a Self-Regulating Positive Temperature Coefficient Heating Element for Extreme Cold Conditions

Poster

Paper ID 8722

Author(s): Alimohammad Adineh (Western Michigan University); Tony Hanson (Western Michigan University); Dinesh Maddipatla (Western Michigan University); Abdulrahman Yusuf (Western Michigan University); Simin Masihi (Western Michigan University); Bradley Bazuin (Western Michigan University); Massood Atashbar (Western Michigan University); Sai Avuthu (Eaton Corporation); Si Chen (Eaton Corporation); Christopher Ring (Eaton Corporation)

Speaker(s): Massood Atashbar (Western Michigan University)

A Stationarity- and Reproducibility-Based Validation Protocol for Inertial Sensor Noise Characterization

Poster

Paper ID 8820

Author(s): Pedro Bossi Nunez (Polytechnic University of Bari); Ludovico Dindelli (Polytechnic University of Bari); Teresa Natale (Polytechnic University of Bari); Francesco Dell'Olio (Polytechnic University of Bari)

Speaker(s): Pedro Bossi Nunez (Polytechnic University of Bari)

Eddy Current Position Sensor for Distance Measurement of Conductive Plates

Poster

Paper ID 8966

Author(s): Mehran Mirzaei (Faculty of Electrical Engineering, Czech Technical Universit...); Jiri Maier (Faculty of Electrical Engineering, Czech Technical Universit...); Pavel Ripka (Czech Technical University in Prague)

Speaker(s): Mehran Mirzaei (Faculty of Electrical Engineering, Czech Technical Universit...)

Sensorpreneur Pitch

Mon Oct 26, 14:30 – 16:00 · Van Oldenbarnevelt

A4L-F Acoustic and Ultrasonic Sensors 1

Mon Oct 26, 16:00 – 17:00 · Leeuwen I and II

Chair(s): Hengky Chandralim (U.S. Air Force Institute of Technology); Peter Steeneken (Delft University of Technology)

Ultrasonic Sensors in Fluid Condition Monitoring - from Fundamental Research to Industrial Instruments

Invited

Paper ID 9117

Author(s): Thomas Voglhuber-Brunnmaier (Johannes Kepler University)

Speaker(s): Thomas Voglhuber-Brunnmaier (Johannes Kepler University)

Ultrasonic 3D Tracking in Real Time with MEMS Microphones

Paper ID 8051

Author(s): Azra Talic (University of Klagenfurt); Vladyslav Sorokin (Infineon Technologies Austria AG); Barnaba Ubezio (Infineon Technologies Austria AG); Felix Ober (Infineon Technologies Austria AG); Harald Gietler (Infineon Technologies); Siegfried Krainer (Infineon Technologies Austria AG); Stephan Weiss (University of Klagenfurt)

Speaker(s): Barnaba Ubezio (Infineon Technologies Austria AG)

Acoustic Performance Appraisal of Nanofiber-Micromesh-Integrated MEMS Microphones

Paper ID 8280

Author(s): Verena Wallner (Infineon Technologies AG); Muhammad Ihsan Alfikro (Gadjah Mada University); Aloysius Farrel (Infineon Technologies AG); Joshua Williams (ETH Zürich); Brainy Happy Ana Tasiman (Gadjah Mada University); Yuliyani Dwi Prabowo (Gadjah Mada University); Sebastian Anzinger (Infineon Technologies AG); Marc Fuedner (Infineon Technologies AG); Kuwat Triyana (Gadjah Mada University); Juan Daniel Prades (Technische Universität Braunschweig); Erwin Peiner (Technische Universität Braunschweig); Hutomo Suryo Wasisto (Infineon Technologies AG)

Speaker(s): Verena Wallner (Infineon Technologies AG)

A4L-G Biodegradable Devices

Mon Oct 26, 16:00 – 17:00 · Goudriaan I and II

Chair(s): Giuseppe Barillaro (Università di Pisa); Clementine Boutry (TU Delft)

Bioresorbable Na-Ion Batteries : an Energy Solution for Transient Medical Implants

Invited

Paper ID 8086

Author(s): Thierry Djenizian (School of Mines Saint-Etienne); Vedi Muniraj (Mines Saint-Étienne); Hussien Hammoud (Mines Saint-Étienne)

Biodegradable Liquid Crystal Dielectrics for Tunable Wireless Patch Antenna Sensors

Paper ID 8211

Author(s): Sourav Patranabish (TU Delft); Mohammad Javad Bathaei (Delft University of Technology); Kunal Masania (Delft University of Technology); Clementine Boutry (TU Delft)

Speaker(s): Sourav Patranabish (TU Delft)

Bulk-Silicon Thinning for Transistors Toward Biodegradable Electronics

Paper ID 8942

Author(s): Zhengwei Liao (TUDelft); Laura Cavedoni (Delft University of Technology); Francesco Stallone (Delft University of Technology); Ceren Kutucu (Delft University of Technology); Padmakumar Rao (Delft University of Technology); Clementine M. Boutry (Delft University of Technology); Filipe Cardoso (Delft University of Technology)

Speaker(s): Zhengwei Liao (TUDelft)

A4L-C Chemical, Electrochemical and Gas Sensors 1

Mon Oct 26, 16:00 – 17:00 · Diamond II

Chair(s): Hamida Hallil (Bordeaux University); Pai-Yen Chen (University of Illinois)

Smart Sensors and Systems: Emerging Directions

Invited

Paper ID 9123

Author(s): Alan O'Riordan (Tyndall National Institute, University College Cork)

ISFET/REFET Performance in pH Buffers and Enzyme-Free Simulated Gastric Fluids

Paper ID 8067

Author(s): Christopher Beale (Fraunhofer Institut IPMS); Götz Ringmann (Fraunhofer Institute for Photonic Microsystems IPMS); Jonas Conrad (Fraunhofer Institute for Photonic Microsystems IPMS); Matthias Wambold (Fraunhofer Institute for Photonic Microsystems, 01129 Dresden...); Hans-Georg Dallmann (Fraunhofer Institute for Photonic Microsystems IPMS); Henry Niemann (Fraunhofer Institute for Photonic Microsystems IPMS); Falah Al-Falahi (Fraunhofer Institute for Photonic Microsystems IPMS); Eberhard Kurth (Fraunhofer Institute for Photonic Microsystems IPMS); Olaf Rüdiger Hild (Fraunhofer Institute for Photonic Microsystems IPMS)

Speaker(s): Christopher Beale (Fraunhofer Institut IPMS)

Laser-Induced Graphene Based Non-Enzymatic Tetracycline Antibiotics Sensor

Paper ID 8951

Author(s): Md Rasel (Tyndall National Institute); Jahidul Islam (Tyndall National Institute); Aidan J. Quinn (Tyndall National Institute); Daniela Iacopino (Tyndall National Institute)

Speaker(s): Md Rasel (Tyndall National Institute)

A4L-A Lidar and Sonar Applications

Mon Oct 26, 16:00 – 17:00 · Van Oldenbarnevelt

Chair(s): André Eugenio Lazzaretti (Federal University of Technology-Paraná); Marzieh Amini (Carleton University)

Autoencoder-Enhanced Sparse Bayesian Learning for Efficient Automotive Occupancy Grid Mapping

Invited

Paper ID 8868

Author(s): Haozhang Jia (NXP Semiconductors); Geethu Joseph (Delft-University-of-Technology); Çağan Önen (NXP Semiconductors Inc.); Ashish Pandharipande (NXP Semiconductors)

Speaker(s): Haozhang Jia (NXP Semiconductors)

LiDAR Resolution Recovery via Foundation-Model-Guided Diffusion

Paper ID 8867

Author(s): Samed Doğan (Munich University of Applied Science); Nico Leuze (Munich University of Applied Sciences); Alfred Schöttl (Munich University of Applied Sciences)

Speaker(s): Samed Doğan (Munich University of Applied Science)

Unsupervised AI for Autonomous Noise Removal in Interferometric Sonar Point Cloud Data

Paper ID 8713

Author(s): Georgina Jeffries (University of East Anglia); Ben Milner (University of East Anglia); Jacob Newman (University of East Anglia); Danny Websdale (GeoAcoustics Ltd)

Speaker(s): Georgina Jeffries (University of East Anglia)

A4L-B Optical Sensors 3

Mon Oct 26, 16:00 – 17:00 · Diamond I

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas); ALEKSANDER PATERNO (University of Valencia/Santa Catarina State University)

Wide-Dynamic-Range Step-Height Sensing via Vectorial Dual-Wavelength Fresnel Diffraction

Paper ID 8111

Author(s): Enes Ataç (İzmir Institute of Technology); Anil Karatay (İzmir Democracy University)

Speaker(s): Enes Ataç (İzmir Institute of Technology)

A 68×40-Pixel Flash LiDAR Sensor with Dynamic Depth Framing Achieving 100-m Ranging Under 103-klux Background Illumination

Paper ID 8556

Author(s): Sadra Tafaghodi Jami (University of Science and Technology, Hong Kong); Ali Fotowat-Ahmady (Sharif University of Technology); George Jie Yuan (Hong Kong University of Science and Technology)

Compact Optical Front-Light Structure for Contrast Enhancement in Lensless Micro CMOS Fluorescence Imaging Sensors

Paper ID 8050

Author(s): arphorn promking (nara institute of science and technology (naist)); Yasumi Ohta (Nara Institute of Science and Technology); Yoshinori Sunaga (Nara Institute of Science and Technology); Ryoma Okada (Nara Institute of Science and Technology); Jun Ohta (Nara Institute of Science and Technology); Kiyotaka Sasagawa (Nara Institute of Science and Technology)

Speaker(s): arphorn promking (nara institute of science and technology (naist))

Integrated Optical Current Sensors with Passive Quadrature Detection for AC/DC Measurement

Paper ID 8594

Author(s): Jinung Jin (Pusan National University); Kwon-Wook Chun (Pusan National University); Eun-Su Lee (Pusan National University); Min-Cheol Oh (Pusan National University)

A4L-I Sensors for Quantum Computing and Cryogenic Applications

Mon Oct 26, 16:00 – 17:00 · Penn II

Chair(s): Filiberto Ricciardella (TNO); Johannes Jobst (Quantamap)

History Effects in Dielectrics and Single-Electron Transistors at Cryogenic Temperatures (Invited)

Invited

Paper ID 8690

Author(s): David J. Michalak (Netherlands Organisation for Applied Scientific Research); Pieter Eendebak (Netherlands Organisation for Applied Scientific Research); Niek van Koolwijk (Netherlands Organisation for Applied Scientific Research); Viatcheslav Dobrovitski (Delft University of Technology); Larysa Tryputen (Netherlands Organisation for Applied Scientific Research); Davide Degli Esposti (Delft University of Technology); Giordano Scappucci (Delft University of Technology); Lieven Vandersypen (Delft University of Technology)

Speaker(s): David J. Michalak (Netherlands Organisation for Applied Scientific Research)

CMOS-Compatible UV-Sensitive Photodiode for Single-Photon Detection

Paper ID 8839

Author(s): Liam Steuding (Infineon Technologies Dresden AG und Co. KG); Thoralf Kautzsch (Infineon Technologies AG); Lukas Matthias Eng (TU Dresden)

Speaker(s): Liam Steuding (Infineon Technologies Dresden AG und Co. KG)

A4L-E Sensors Materials, Fabrication and Packaging

Mon Oct 26, 16:00 – 17:00 · Mees II

Chair(s): Sharmistha Bhadra (McGill University, Canada); Ajay Giri Prakash Kottapalli (University of Groningen)

Robust Non-Covalent Functionalization of Graphene for Microfabrication-Compatible Biosensors

Paper ID 8451

Author(s): Ksenija Arslanova (University of the Bundeswehr Munich); Bajramshahe Shkodra (Sensing Technology Laboratory, Libera Università di Bolzano); Sebastian Hauk (Friedrich-Alexander-Universität Erlangen-Nürnberg); Sebastian Klenk (University of the Bundeswehr Munich); Kathrin Knirsch (Friedrich-Alexander-Universität Erlangen-Nürnberg); Andreas Hirsch (Friedrich-Alexander-Universität Erlangen-Nürnberg); Tanja Stimpel-Lindner (University of the Bundeswehr Munich); Georg Duesberg (University of the Bundeswehr Munich)

Speaker(s): Ksenija Arslanova (University of the Bundeswehr Munich)

Through-Via-Array-Assisted Sacrificial-Layer Release for a Micro-Hemispherical Resonator with Thermally Co-Formed Spherical Electrodes

Paper ID 8609

Author(s): yinan zhang (Tsinghua University); Bin Zhou (Tsinghua University); Rong Zhang (Tsinghua University)

Amorphous Silicon Single Photon Avalanche Schottky Diode for 3-D Chip Integration

Paper ID 8753

Author(s): Zidu Li (University of Siegen); Yukun Wu (University of Siegen); Phil David Boerner (University of Siegen/Fak. IV/ACIS); Javid Nabizade (University of Siegen); Bhaskar Choubey (Universität Siegen)

Speaker(s): Phil David Boerner (University of Siegen/Fak. IV/ACIS)

Flexible Bio-Adhesive Electrode Patch for Continuous Epicardial ECG Monitoring in Ex-Vivo Perfused Hearts

Paper ID 9011

Author(s): Jayavinisha L (Indian Institute of Technology Madras); Hemamalini V (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Harsh V. Gechode (Indian Institute of Technology Madras); Priyanka N Prem (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Jayaraj Joseph (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Nabeel PM (Indian Institute of Technology Madras)

Speaker(s): Jayaraj Joseph (Healthcare Technology Innovation Center, Indian Institute of Technology Madras)

A4L-H Transient Sensory Interfaces: Developing Approaches Toward Sustainable Bioelectronics

Mon Oct 26, 16:00 – 17:00 · Penn I

Chair(s): Zeynep Celik (University of Texas at Arlington)

Natural Polymer Platforms for Sustainable Transient and Bioresorbable Sensing

Invited

Paper ID 8915

Author(s): Luisa Petti (Free University of Bozen-Bolzano); Ahmed Rasheed (Free University of Bozen-Bolzano); Moritz Ploner (Free University of Bozen-Bolzano); Giulia Elli (Free University of Bozen-Bolzano)

Speaker(s): Luisa Petti (Free University of Bozen-Bolzano)

Conductive and Adhesive Double Network Hydrogel for Wearable Strain Sensing and Physiological Motion Monitoring

Paper ID 8677

Author(s): Reza Karimi-Soflou (University of Glasgow); Ali Mokhtarzade (University of Glasgow); Hadi Heidari (University of Glasgow); Roghaieh Parvizi (University of Glasgow)

Speaker(s): Ali Mokhtarzade (University of Glasgow)

A Sustainable Textile Antenna Interface for Battery-Less RF Energy Harvesting and Wireless Communication in Wearable IoMT Applications

Paper ID 8206

Author(s): Jiaoran Wang (University of Glasgow); Jungang Zhang (University of Glasgow); Luvsanbat Khurelbaatar (University of Glasgow); Pouya Khosravi (University of Glasgow); Tingwen Li (University of Glasgow); Nosrat Mirzai (University of Glasgow); John Mercer (University of Glasgow); Hadi Heidari (University of Glasgow)

A4L-D Wearable RF/Microwave/Ultrasound-Based Deep Tissue Health Monitoring

Mon Oct 26, 16:00 – 17:00 · Mees I

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY); Michael McShane (Texas A&M University)

Enabling Deep-Body Implantable Sensors Through Optimal Wireless Power and Data Transfer

Paper ID 8136

Author(s): Denys Nikolayev (IETR UMR CNRS 6164); Anahita Piri (IETR CNRS, University of Rennes); Anna Kaliuzhna (IETR CNRS, University of Rennes); Erdem Cil (IETR CNRS, University of Rennes); Icaro Soares (Trinity College); Mingxiang Gao (IT'IS); Zvonimir Šipuš (University of Zagreb); Anja Skrivervik (École Polytechnique Fédérale de Lausanne)

Clinical Validation of a Wearable Ultrasound Patch for Achilles Tendon Healing Monitoring

Paper ID 8285

Author(s): Fengzhu Guo (Tianjin University); Qiang Liu (Peking University Third Hospital); Xu Zhang (Tianjin University); Danyang Zheng (Tianjin University); Menglun Zhang (Tianjin University)

Speaker(s): Menglun Zhang (Tianjin University)

A Battery-Powered Wireless Implantable System for Long-Term Intracranial Pressure Monitoring

Paper ID 8290

Author(s): Kehui Qi (Aerospace Information Research Institute, Chinese Academy of Sciences); Zhaoyang Li (Chinese Academy of Sciences); Fu Xu (Beijing Pins Medical Co., Ltd); Kun Zhao (Chinese Academy of Sciences); Shuilong Huang (Chinese Academy of Sciences); Yuqing Zhang (Xuanwu Hospital, Capital Medical University); Hua Wei (Chinese Academy of Sciences); Nan Li (Aerospace Information Research Institute, Chinese Academy of...); Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...); Jian Chen (Aerospace Information Research Institute, Chinese Academy of...)

YP/WiSe/Industry Reception

Mon Oct 26, 17:30 – 19:00 · City Hall

B1P-K Acoustic and Ultrasonic Sensors 3

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Reza Askari Moghadam (Sorbonne University)

Fast Acoustic Field Prediction of Large PMUT Arrays Using a U-Net Surrogate Model

Poster

Paper ID 8107

Author(s): Kaiwen Zheng (Northwestern Polytechnical University); Kuixu Han (Northwestern Polytechnical University); Lixiang Wu (Northwestern Polytechnical University)

Speaker(s): Kaiwen Zheng (Northwestern Polytechnical University)

Millimeter-Accurate 3D Fingertip Tracking Using a Dual-Mode MEMS Ultrasonic Transducer Array

Poster

Paper ID 8504

Author(s): Vishwapriya Gautam (Infineon Technologies AG); Stefan Schwarz (Infineon Technologies AG); Victor Tomashevich (Infineon Technologies AG); Jens Harnisch (Infineon-Technologies-AG); Christian Bretthauer (Infineon Technologies); Eckehard Steinbach (Technical University of Munich)

Speaker(s): Vishwapriya Gautam (Infineon Technologies AG)

Open-Source 3D-Printer-Based Platform for Phase-Synchronized Mapping of 40 kHz Airborne Ultrasound Fields

Poster

Paper ID 8509

Author(s): Hiroki Kawahara (Kagoshima University); Kaito Yamao (Sasebo Kokai Sokkisha Company, Ltd.); Akio Tsuchimoto (Kagoshima University); Kentaro Oda (Kagoshima University); Takayasu Fuchida (Kagoshima University)

Speaker(s): Hiroki Kawahara (Kagoshima University)

3D-Printed Directional Acoustic Metamaterial Sensor Inspired by A. grisella

Poster

Paper ID 8827

Author(s): Andreas Gavrielides (University of Strathclyde); James Windmill (University of Strathclyde); Andrew Reid (University of Strathclyde)

Speaker(s): Andreas Gavrielides (University of Strathclyde)

Low-Complexity Doppler Correction for MIMO Orthogonal Signal Division Multiplexing in Underwater Acoustic Communications

Poster

Paper ID 8875

Author(s): Keisuke Nakamura (University of Tsukuba); Tadashi Ebihara (University of Tsukuba); Naoto Wakatsuki (University of Tsukuba); Yuka Maeda (University of Tsukuba)

Speaker(s): Keisuke Nakamura (University of Tsukuba)

Low-Frequency Piezoelectric Detection and Classification of Underground Biological Activity

Poster

Paper ID 8922

Author(s): Nicholas Rioux (University of New Hampshire); Gavin Campbell (University of New Hampshire); Md Shaad Mahmud (University of New Hampshire)

Speaker(s): Nicholas Rioux (University of New Hampshire)

Strain-Gauge Shape Sensing for Deformation Correction in a Wearable Ultrasound Demonstrator

Poster

Paper ID 8953

Author(s): Jaël Huisjes (Delft University of Technology); Raphaël Lubbers (Delft University of Technology); Thomas Olieman (Delft University of Technology); Vincent Sivera van der Sluijs (TU Delft); Jurje Steenwijk (Delft University of Technology); Marnix Welling (TU Delft); Imad Bellouki (Delft University of Technology); Pertjjs, Michiel (Delft University of Technology)

Speaker(s): Raphaël Lubbers (Delft University of Technology)

A Flexible, Linear polyCMUT Pressure Sensor for Blood Pressure Monitoring

Poster

Paper ID 8797

Author(s): Saeb Mousavi (University of Melbourne); Jack Drummond (University of Melbourne); Peter Chan (University of Melbourne); Dineth Mudalige (University of Melbourne); David Collins (University of Melbourne); Sam John (University of Melbourne)

Speaker(s): Saeb Mousavi (University of Melbourne)

B1P-Q Demo Session 1

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Calogero Maria Oddo (Sant'Anna School of Advanced Studies); Paul Vulto (MIMETAS)

Live Demonstration: Segmented I²C Piggyboard Tiles for Scalable Time-of-Flight Sensor Arrays

Paper ID 8588

Author(s): Sophie Charlotte Keunecke (RWTH Aachen University); Marcel Ochsendorf (RWTH Aachen University); Mathias Hüsing (RWTH Aachen University); Burkhard Corves (RWTH Aachen University)

Speaker(s): Sophie Charlotte Keunecke (RWTH Aachen University)

Live Demo: Real-Time Rubbing-Sound Acoustic Sensing for Adhesive-Applied Tile Wall Inspection

Paper ID 8707

Author(s): Atsushi Ito (Chuo University); Yuto Kurosawa (Chuo University); Masako Saito (Utsunomiya University); Masafumi Koike (Utsunomiya University)

Live Demonstration: Fiber Bragg Grating-Based Wearable Device for Muscular Activity Monitoring

Paper ID 8822

Author(s): Leonardo Maggioni (Dept. of Mechanical Engineering, Politecnico di Milano); Nora Millor (Public University of Navarre); Elieser E. Gallego (Public University of Navarre); Carlos Ruiz-Zamarreño (UPNA); Ignacio Raul Matías (Public University of Navarre); Alfredo Cigada (Polytechnic University of Milan); Paola Saccomandi (Politecnico di Milano)

Speaker(s): Leonardo Maggioni (Dept. of Mechanical Engineering, Politecnico di Milano)

Live Demonstration: Privacy-Preserving Driver-State Sensing Using a Low-Resolution Infrared Array

Paper ID 8824

Author(s): Tajim Md. Niamat Ullah Akhund (Toyota Technological Institute); Yojiro Mori (Toyota Technological Institute)

Speaker(s): Tajim Md. Niamat Ullah Akhund (Toyota Technological Institute)

Live Demonstration: Soma Wearables

Paper ID 8929

Author(s): Arlana Davis (Soma Wearables); Roy Luong (Soma Wearables); Samir Bhuiyan (Soma Wearables); Alexander Stefanidis (SOMA Wearables); Ravi Prakash (Carleton University)

Speaker(s): Arlana Davis (Soma Wearables)

Live Demonstration: Whisker-Inspired Sensors That Deal with Uncertainty While Surface Mapping

Paper ID 8990

Author(s): Teresa Kent (BioMorphic Intelligence Lab, Delft University of Technology); Tjerk van der Weij (BioMorphic Intelligence Lab, Delft University of Technology); Chaoxiang Ye (BioMorphic Intelligence Lab, Delft University of Technology); Salua Hamaza (BioMorphic Intelligence Lab, Delft University of Technology)

Speaker(s): Teresa Kent (BioMorphic Intelligence Lab, Delft University of Technology)

Live Demonstration: A Hybrid Capacitive-Piezoelectric Tactile Taxel for Static and Dynamic Triaxial Force Sensing

Paper ID 9031

Author(s): Kalash Chandakapure (Tata Consultancy Services); Shreya Bhadauriya (Tata Consultancy Services); Biswanath Panda (NCFlexE, Indian Institute of Technology Kanpur); Ashutosh Tripathi (NCFlexE, Indian Institute of Technology Kanpur); Baquer Mazhari (NCFlexE, Indian Institute of Technology Kanpur); Yashowanta Mohapatra (NCFlexE, Indian Institute of Technology Kanpur); Paramita Kar Choudhury (Tata Consultancy Services); Titas Bera (TATA Consultancy Services)

Speaker(s): Titas Bera (TATA Consultancy Services)

Live Demonstration: A Point-of-Care Device and Mobile App for Quick Estimation of Urine Urea

Paper ID 8700

Author(s): Saransh Chourey (Indian Institute of Technology Bhilai); Asmita Bose (National Institute of Technology Durgapur); Vijay Kumar Sahu (IIT Bhilai); Avishek Adhikary (Indian Institute of Technology Bhilai)

Speaker(s): Avishek Adhikary (Indian Institute of Technology Bhilai)

Live Demonstration: AI Assisted Portable Breath VOC Screening Platform

Paper ID 9026

Author(s): Navonil Ganguly (Tata Consultancy Services); Tanushree Banerjee (Tata Consultancy Services Ltd.); Mohd Abdullah Siddiqui (Tata Consultancy Services); Souradeep Roy (Indian Institute of Technology Kharagpur); Prasanta Kumar Guha (Indian Institute of Technology Kharagpur); Avik Ghose (Tata Consultancy Services Limited); Arpan Pal (Tata Consultancy Services (TCS)); Titas Bera (TATA Consultancy Services); Sanjay Kimbahu (Tata Consultancy Services); PARAMITA KAR CHOUDHURY (Tata Consultancy Services)

Speaker(s): PARAMITA KAR CHOUDHURY (Tata Consultancy Services)

B1P-L Physical Sensors 4

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Yoshikazu Hirai (Kyoto University)

Ferroelectric Resonant-Frequency Tuning of Piezoelectric MEMS Ultrasonic Sensors with Sensitivity-Enhancing Buckled Diaphragms for Ghost-Suppressive Multi-Frequency Measurement

Poster

Paper ID 8076

Author(s): Kaoru Yamashita (Kyoto Institute of Technology); Junpei Yamamoto (Kyoto Institute of Technology)

Speaker(s): Kaoru Yamashita (Kyoto Institute of Technology)

Miniaturized Calorimetric Wall Shear Stress Sensor for Fluctuation Measurements in Turbulent Flows

Poster

Paper ID 8100

Author(s): Baptiste Baradel (CNRS - Université de Montpellier); Alex Gothow (Technische Universität Berlin); Julien Weiss (Technische Universität Berlin)

Speaker(s): Baptiste Baradel (CNRS - Université de Montpellier)

A Dual-Cavity Piezoelectric MEMS Accelerometer with Controllable Beam-Boundary Definition for Vibration Monitoring

Poster

Paper ID 8309

Author(s): Liangjie Bai (Tianjin University); Tingyu Xiang (Tianjin University); Yiyao Liu (Tianjin University); Chen Sun (Tianjin University); Wenlan Guo (Tianjin University); Yuan Hao (Tianjin University); Wei Pang (Tianjin University); Menglun Zhang (Tianjin University)

Speaker(s): Menglun Zhang (Tianjin University)

Embedded Thin-Film Resistive Sensor for Operando Thermal Monitoring in Lithium-Ion Coin Cells

Poster

Paper ID 8313

Author(s): Hazal Gergeroglu (INL - International Iberian Nanotechnology Laboratory); Denis Santos (INL - International Iberian Nanotechnology Laboratory); Roberto Laranjeira (INL - International Iberian Nanotechnology Laboratory); Hugo M. Oliveira (INL - International Iberian Nanotechnology Laboratory); Joao Piteira (INL - International Iberian Nanotechnology Laboratory)

Speaker(s): Hazal Gergeroglu (INL - International Iberian Nanotechnology Laboratory)

In-Vehicle Evaluation of Building-Block-Type Three-Axis Gyroscope

Poster

Paper ID 8435

Author(s): Ippei Takahashi (TOYOTA CENTRAL R&D LABS., INC.); Hirofumi Funabashi (Toyota Central R&D Labs., Inc.); Teruhisa Akashi (TOYOTA CENTRAL R&D LABS., INC.)

Speaker(s): Ippei Takahashi (TOYOTA CENTRAL R&D LABS., INC.)

Integrated Fuel Level Sensing and Communication for Autonomous Vehicles with a Mechanically Reconfigurable Antenna

Poster

Paper ID 8441

Author(s): Phalguni Mathur (Bharathiar University); Vijaykumaran Alagarsamy (University of Twente); Robin Augustine (Uppsala University); Gopikrishna M (Calicut University); André Kokkeler (University of Twente); Sujith Raman (University of Twente)

Speaker(s): Vijaykumaran Alagarsamy (University of Twente)

Real-Time and Memory-Enabled Moisture Monitoring in Pipelines Using a Planar Microwave Sensor

Poster

Paper ID 8663

Author(s): Maziar ShafieiDarabi (University of Calgary); Carolyn Ren (University of Waterloo); Masoud Baghelani (University of Alberta); Zahra Abbasi (University of Calgary)

Speaker(s): Maziar ShafieiDarabi (University of Calgary)

Exploiting Inter-Modal Coupling via Dual-Mode Excitation for MEMS Electric Field Mill Performance Enhancement

Poster

Paper ID 8988

Author(s): Hongyun Ren (University of Science and Technology Beijing); Pinyi Li (University of Science and Technology Beijing); Weiyang Li (University of Science and Technology Beijing); Jianhua Li (University of Science and Technology Beijing); Najib Kacem (University of Franche-Comté); Xiaolong Wen (University of Science and Technology Beijing)

Speaker(s): Hongyun Ren (University of Science and Technology Beijing)

Wave Height and 2D Wind Vector Sensor Using MEMS Differential Pressure Sensor Elements

Poster

Paper ID 9035

Author(s): Kako Koeda (Keio University); Takuto Kishimoto (Keio University); Toshihiro Shiratori (Keio University); Kyota Shimada (School of Integrated Design Engineering, Graduate School of ...); Ryusei Ando (School of Integrated Design Engineering, Graduate School of ...); Hidetoshi Takahashi (Keio University)

Speaker(s): Kako Koeda (Keio University)

Surface Material Recognition via RGBD Camera-Based Diffuse and Specular Reflectance Estimation

Poster

Paper ID 8163

Author(s): Khadim Hussain (Sungkyunkwan University); Sukhan Lee (Sejong University); Eunil Park (Sungkyunkwan University)

Speaker(s): Sukhan Lee (Sejong University)

B1P-P Physical Sensors 7 (Option B)

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Bernhard Jakoby (Johannes Kepler University Linz)

Analysis and Closed-Loop Suppression of In-Plane Linear Acceleration Sensitivity for MEMS Quadruple Mass Gyroscope

Poster

Paper ID 8697

Author(s): Jianjun Ma (Tsinghua University); Bin Zhou (Tsinghua University); Qi Wei (Tsinghua University); Rong Zhang (Tsinghua University)

Speaker(s): Jianjun Ma (Tsinghua University)

MTJ Sensor-Based Magnetic Microparticle Detection with Edge ML

Poster

Paper ID 9051

Author(s): SALEM AL-SAQAF (KAUST); DIVYANSHU DIVYANSHU (King Abdullah University of Science and Technology); Meng Tang (King Abdullah University of Science and Technology); Selma Amara (King Abdullah University of Science and Technology); Gianluca Setti (Department of Electronics and Telecommunications (DET), Politecnico di Torino, Italy)

Speaker(s): SALEM AL-SAQAF (KAUST)

Influence of Polymer Structure and Ink Formulation on Screen-Printed Flexible Humidity Sensors Based on Carbon and Graphene Inks

Poster

Paper ID 9118

Author(s): Maëlle Reigner (IETR - Université Rennes); Rafika Selmi (Institut d'Electronique et des Technologies du Numérique (IETR), Université de Rennes); Jean-Charles Fustec (Institut d'Electronique et des Technologies du Numérique (IETR), Université de Rennes); France Le Bihan (Institut d'Electronique et des Technologies du Numérique (IETR), Université de Rennes); Maxime Harnois (Institut d'Electronique et des Technologies du Numérique (IETR), CNRS)

Speaker(s): Maëlle Reigner (IETR - Université Rennes)

A Sense of Touch: Three-Axis Sensing for Robotic Prosthetic Fingertips

Poster

Paper ID 9132

Author(s): Chrys Morton (University of British Columbia); Jian Gao (University of British Columbia); Freya Hik (University of Alberta); Ahmed Shehata (University of New Brunswick); John Madden (University of British Columbia)

Speaker(s): Chrys Morton (University of British Columbia)

Battery-Free Wireless Strain Sensing of Rotor Blades Synchronized with Rotation Angle

Poster

Paper ID 9133

Author(s): Jin Mitsugi (Keio University); Osamu Tokumasu (Keio University); Masashi Owaki (Keio University)

Speaker(s): Jin Mitsugi (Keio University)

A Dielectric D-Dot Antenna for Large Electric-Field Measurements

Poster

Paper ID 9144

Author(s): Colin Mussman (JHU/APL); Cameron Harjes (AFRL); Sahir Virani (AFRL); John King (JHU/APL); Wayne Bayly (JHU/APL); Miram Elag (JHU/APL); Michael Sherburne (Johns Hopkins Applied Physics Laboratory)

Speaker(s): Colin Mussman (JHU/APL)

A Method for Parameter Extraction, Circuit Modeling, and Characterization of Passive Photocells at Microwave Frequencies

Poster

Paper ID 9157

Author(s): Ali Maleki Gargari (University of British Columbia); Zahra Sarpanah Sourkouhi (University of British Columbia Okanagan); Loïc Markley (University of British Columbia Okanagan); Mohammad Zarifi (University of British Columbia)

Speaker(s): Mohammad Zarifi (University of British Columbia)

Piezoelectric Flexural Plate Wave MEMS Temperature Sensor Coupled to a Frequency Doublet Resonance Detection Circuit

Poster

Paper ID 9160

Author(s): Stefano Bertelli (Università di Brescia); Alessandro Nastro (Università degli Studi di Brescia); Marco Ferrari (Università degli Studi di Brescia); Vittorio Ferrari (Università degli Studi di Brescia)

Speaker(s): Alessandro Nastro (Università degli Studi di Brescia)

Integrated Smart Bolt Sensor for Synchronous Temperature and Heat Flux Detection Without Active Cooling Structure

Poster

Paper ID 9176

Author(s): Zhongkai Zhang (School of Mechanical Engineering, Xi'an Jiaotong University); Yanzhong Chen (Xi'an Jiaotong University); Le Li (Xi'an Jiaotong University); Shuai Yu (Xi'an Jiaotong University); Guoliang Zhou (Xi'an Jiaotong University); Shuimin Li (Xi'an Jiaotong University); Zhaojun Liu (Xi'an Jiaotong University); Luwen An (Beijing Power Machinery Institute); Zhixia Qiao (Xi'an Aerospace YuanZheng Fluid Control Company Ltd); Bian Tian (Xi'an Jiaotong University)

Speaker(s): Zhongkai Zhang (School of Mechanical Engineering, Xi'an Jiaotong University)

B1P-N Radar Sensing and Signal Processing

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall
Chair(s): Kianoush Rassels (TU Delft)

Pattern-Coupled Sparse Bayesian Learning-Based STAP Method for Low-Altitude Wind Shear Velocity Estimation

Poster

Paper ID 8006

Author(s): Li Hai (Civil Aviation University of China); Jiajun Ding (Civil Aviation University of China); Lingwei Shao (Northwest Air Traffic Management Bureau Civil Aviation Administration of China); Yifan Qiu (Civil Aviation University of China); Ruihua Liu (Civil Aviation University of China); Ming Jin (Ningbo University)
Speaker(s): Li Hai (Civil Aviation University of China)

Multipath-Robust Human Occupancy Detection Using Confidence Classification for Millimeter-Wave MIMO Radar

Poster

Paper ID 8176

Author(s): Kohei Kawajiri (Mitsubishi Electric Corporation); Yasunori Hoshihara (Mitsubishi Electric Corporation); Yuichi Goda (Mitsubishi Electric Corporation); Atsuhiko Yamada (Mitsubishi Electric Corporation); Koki Inoue (Mitsubishi Electric Corporation)
Speaker(s): Kohei Kawajiri (Mitsubishi Electric Corporation)

Echo-Image Domain Filtering for Integrated SAR Imaging and RFI Suppression

Poster

Paper ID 8291

Author(s): Yu Xiong (Southeast University); Kun Deng (State Key Laboratory of Millimeter Waves, Southeast Universi...); Yuan Mao (Southeast University); Jie Li (Nanjing University of Aeronautics and Astronautics); Xuezhi Chen (Southeast University); Shuyi Gu (Southeast University); Yan Huang (State Key Laboratory of Millimeter Waves, Southeast Universi...)
Speaker(s): Yu Xiong (Southeast University)

Implementation of a Multi-Channel Wearable Radar for Cardiac Monitoring with Inertial Measurement Unit-Enhanced Signal Quality

Poster

Paper ID 8696

Author(s): Neil Tom (Monash University); Stephanie Pella (Monash University); Will Middlewick (Monash University); Tuguy Esgin (Curtin University); Mark Halaki (University of Sydney); Martin Ugander (University of Sydney); Mehmet Yuce (Monash University)
Speaker(s): Neil Tom (Monash University)

B1P-J Sensor Materials, Fabrication and Packaging 2

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall
Chair(s): Sharmistha Bhadra (McGill University, Canada)

Design and Optimization of an Inductive LC Sensor for Wireless Pressure Monitoring

Poster

Paper ID 8169

Author(s): Xinxin Chang (University of Science and Technology of China); Yueyang Wang (USTC); Jinxing Wang (University of Science and Technology of China); Yingao Xu (University of Science and Technology of China); Peng YuLian (University of Science and Technology of China); Hongbo Wang (University of Science and Technology of China)
Speaker(s): Xinxin Chang (University of Science and Technology of China)

Hybrid Low-Temperature 5 mTorr Vacuum Sealing for Die-Level CMOS MEMS Packaging

Poster

Paper ID 8170

Author(s): Cheng-Yang Chang (Taiwan Semiconductor Research Institute, National Institutes...); Chin-Te Hsin (Taiwan Semiconductor Research Institute); Hann-Huei Tsai (Taiwan Semiconductor Research Institute); Ying-Zong Juang (Taiwan Semiconductor Research Institute); Sheng-Hsiang Tseng (Taiwan Semiconductor Research Institute, National Institutes...)
Speaker(s): Cheng-Yang Chang (Taiwan Semiconductor Research Institute, National Institutes...)

Stress Tolerance of Molded Resin Block Sensors Constituting Building-Block-Type Three-Axis Gyroscope

Poster

Paper ID 8218

Author(s): Teruhisa Akashi (TOYOTA CENTRAL R&D LABS., INC.); Hirofumi Funabashi (Toyota Central R&D Labs., Inc.); Ippei Takahashi (TOYOTA CENTRAL R&D LABS., INC.)

Speaker(s): Teruhisa Akashi (TOYOTA CENTRAL R&D LABS., INC.)

Scalable Nanofabrication and Quality Inspection for Plasmonic Sensing Array

Poster

Paper ID 8342

Author(s): Saswat Mohapatra (University of Houston); Mohammad Mallick (University of Houston); Abhay Kotnala (University of Houston); Wei-Chuan Shih (University of Houston)

Speaker(s): Wei-Chuan Shih (University of Houston)

A Glass-Reflow TGV-Based High Performance Thermal Flow Sensor with On-Chip Temperature Sensor for Reducing Thermal Crosstalk

Poster

Paper ID 8377

Author(s): Xiang Liu (southeast university); Ya-Ge Liu (Southeast University); Gong-Zeng Liu (Southeast University); He Wang (Southeast University); Zai-Fa Zhou (Key Laboratory of MEMS of the Ministry of Education)

Speaker(s): Xiang Liu (southeast university)

Modular Velostat Floor Pressure Pad with Hook-Type Expansion for Smart Factory Worker Safety

Poster

Paper ID 8467

Author(s): Ki Hak Lee (Daegu Catholic University); Byeong Su Lee (Daegu Catholic University); Seong Jun Kim (Daegu Catholic University); Chae Uk Seong (Daegu Catholic University); Wol Young Kim (Daegu Catholic University); Saet Byeol Kim (Daegu Catholic University); Dongling Wu (Daegu Catholic University); Jierui Xue (Daegu Catholic University); Bonghwan Kim (Daegu Catholic University)

Ultrafast Humidity Sensor Based on a Self-Assembled PS/GOQD Microsphere Monolayer

Poster

Paper ID 8538

Author(s): Qie Lyu (Southeast University); Mengting Wang (Key Laboratory of MEMS of the Ministry of Education, Southea...); Jianqiu Huang (Key Laboratory of MEMS of the Ministry of Education, Southea...)

Speaker(s): Mengting Wang (Key Laboratory of MEMS of the Ministry of Education, Southea...)

Fabrication and Characterisation of a Soft Sensor with Biocompatible Conductive Gel

Poster

Paper ID 8576

Author(s): Venkata Rithwick Puranam (University of Twente); Carol Derla (University of Twente); Islam S M Khalil (University of Twente); Giulio Dagnino (University of Twente); Momen Abayazid (King Fahd University of Petroleum & Minerals); Gijs Krijnen (University of Twente)

Speaker(s): Venkata Rithwick Puranam (University of Twente)

Evolution of Thermomechanical Stress in a Monolithic Quartz Vibrating Beam Accelerometer from Packaging to Operation

Poster

Paper ID 8617

Author(s): SHENGSHOU LIN (Southeast University); Jinxing Liang (Southeast University)

Speaker(s): SHENGSHOU LIN (Southeast University)

Go Functionalized $\text{SnO}_2\text{Tio}_2\text{Pva}$ Nanocomposite for Room Temperature NO_2 Sensing

Poster

Paper ID 8629

Author(s): Aishwarya Patil; Sahil Sharma (National Institute of Technology Goa); Apeksha Madhukar (Indian Institute of Technology Goa); BIDHAN PRAMANICK

Speaker(s): Aishwarya Patil

Development of an Autoclave-Compatible Ecoflex-Encapsulated Velostat Pressure Sensor for Smart Surgical Trays

Poster

Paper ID 8668

Author(s): Anis Fatema (VIT Vellore); Aftab Hussain (International Institute of Information Technology Hyderabad); Nazek El Atab (King Abdullah University of Science and Technology (KAUST))

Speaker(s): Anis Fatema (VIT Vellore)

Simulation-Guided fs-Laser Fabrication of Deep Trenches for Embedded IDC Wood-Moisture Sensors

Poster

Paper ID 8863

Author(s): Paul Reber (Technische Hochschule Brandenb); Steffen Henke (Brandenburg University of Applied Science); Jesco Schäfer (Eberswalde University for Sustainable Development); Philipp Kuttner (Eberswalde University for Sustainable Development); Ulrich Schwarz (Eberswalde University for Sustainable Development); Justus Eichstädt (Brandenburg University of Applied Science); Soeren Hirsch (Brandenburg University of Applied Sciences)

Speaker(s): Paul Reber (Technische Hochschule Brandenb)

Flexible PVDF-TrFE/CoFe₂O₄ Nanocomposite Films on PET/ITO for Piezoelectric Sensing

Poster

Paper ID 8916

Author(s): Fabrizio Marra (Università di Roma Sapienza); Lavanya Rani Ballam (Università di Roma Sapienza); Alice Nicole Casling (Sapienza University of Rome); Alessio Tamburrano (Università di Roma Sapienza); Maria Paola Bracciale (Sapienza University of Rome); Maria Sabrina Sarto (Sapienza University of Rome)

Speaker(s): Fabrizio Marra (Università di Roma Sapienza)

Silver Cluster-Assembled Material Devices for Memory-Enabled Atmosphere Sensing Toward In-Sensor Odor Learning

Poster

Paper ID 9016

Author(s): Tomoya Okada (Tokyo University of Science); Kota Motegi (Tokyo University of Science); Shuntaro Takahashi (Tanaka Precious Metal Technologies Co., Ltd.); Yuichi Negishi (Tohoku University); Yumeng Zheng (Tokyo University of Science); Kentaro Kinoshita (Tokyo University of Science)

Speaker(s): Tomoya Okada (Tokyo University of Science)

B1P-M Sensors Networks and IOT 2

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Alan O Riordan (Tyndall National Institute)

Wi-SUN for Rural IoT: Performance Analysis of a Village-Scale Smart Streetlight System

Poster

Paper ID 8472

Author(s): Kartik Gharde (IIITH); Ruthwik Muppala (International Institute of Information Technology Hyderabad); Himanshu Fanibhare (Smart City Living Lab); Ushasri Mogadali (International Institute of Information Technology Hyderabad); Anuradha Vattam (IIITH); Aftab Hussain (International Institute of Information Technology Hyderabad)

Speaker(s): Aftab Hussain (International Institute of Information Technology Hyderabad)

Battery-Free, BLE-Enabled Wearable Device for Multi-Floor Indoor Emergency Alert Tracking

Poster

Paper ID 8846

Author(s): Ruthwik Muppala (International Institute of Information Technology Hyderabad); Ananya Ck (International Institute of Information Technology Hyderabad); Kartik Gharde (IIITH); Chandrashekar Dursoju (International Institute of Information Technology Hyderabad); Aftab Hussain (International Institute of Information Technology Hyderabad)

Speaker(s): Aftab Hussain (International Institute of Information Technology Hyderabad)

Performance Evaluation of UWB in Indoor Environments: CIR and Coverage Analysis

Poster

Paper ID 8848

Author(s): Juan Carlos Santamaria Pedron (Universitat de València); Rafael Berkvens (University of Antwerp); Carlos Reaño (Universitat de València); Juan José Pérez-Solano (University of Valencia); Joaquín Torres-Sospedra (Departament d'Informàtica, Universitat de València, Spain VA...)

Speaker(s): Juan Carlos Santamaria Pedron (Universitat de València)

B1P-O Wearable Sensors and Systems 3 (Option B)

Tue Oct 27, 8:30 – 10:00 · Shipping, Exchange & Mercurius Hall

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY)

Breathable Hydrogel-Fabric Electrodes for Wearable Myoelectric Signal Detection

Poster

Paper ID 8637

Author(s): Sa Wang (ETH Zurich); Hannah Nyren (UBC); Weifeng Yang (ETH Zürich); Yuanlong Li (ETH Zürich); Alexander V. Shokurov (ETH Zürich); Carlo Menon (ETH Zurich)

Speaker(s): Sa Wang (ETH Zurich)

Kirigami-Assisted Textile Capacitive Parallel Plate Strain Sensor for Respiration Monitoring in Saxophone Performance

Poster

Paper ID 9043

Author(s): Pierre Kateb (ETH Zurich); Alexander V. Shokurov (ETH Zürich); Akhil Areeckal (ETH Zurich); Carlo Menon (ETH Zurich)

Speaker(s): Pierre Kateb (ETH Zurich)

Microfabricated Flexible 4x4 Graphene Thermistor Array for Spatial Temperature Mapping

Poster

Paper ID 9064

Author(s): Sera Akyeli (Sabanci University); sena turker (EPFL); Oğuz Mustafa Albayrak (Sabanci University); Farid Sayar Irani (Sabanci University); Melih Tasdelen (SABANCI UNIVERSITY); Muhammad Umar (Sabanci University, Sabanci University Nanotechnology Research and Application Center (SUNUM)); MURAT KAYA YAPICI (SABANCI UNIVERSITY)

Speaker(s): Sera Akyeli (Sabanci University)

Garment-Integrated Silver-Based Interdigitated Capacitive Pressure Sensor Fabricated by Direct Ink Writing for Elbow Touch Detection

Poster

Paper ID 9142

Author(s): Maria Papaefstathiou (Eth Zurich-bmht Group); Mohamed Elgendi (Khalifa University); Carlo Menon (ETH Zurich)

Speaker(s): Maria Papaefstathiou (Eth Zurich-bmht Group)

Enhancing Activity Recognition via Barometric-Inertial Sensor Fusion

Poster

Paper ID 9169

Author(s): Helmi Puustinen (University of Turku); Katri Karhinoja (University-of-Turku); Jukka-Pekka Sirkiä (University of Turku); Matti Kaisti (University of Turku)

Speaker(s): Helmi Puustinen (University of Turku)

Spray-Coated Iron Oxide-Based Magnetic Textiles for Underwater Actuation

Poster

Paper ID 9178

Author(s): Melih Tasdelen (SABANCI UNIVERSITY); Burcu Arman Kuzubasoglu (SABANCI UNIVERSITY); Huseyin Sozeri (TÜBİTAK National Metrology Institute (UME)); Murat Kaya Yapici (SABANCI UNIVERSITY)

Speaker(s): Melih Tasdelen (SABANCI UNIVERSITY)

Multimodal Respiration Signal Analysis for Wearable Cardiorespiratory Monitoring Using a Flexible Graphene-Based Sensor: a Comparative Study

Poster

Paper ID 9179

Author(s): Alessandro Giuseppe D'Aloia (Sapienza University of Rome)

Tuesday Morning Coffee Break

Tue Oct 27, 10:00 – 10:30 • Shipping, Exchange & Mercurius Hall

Sensors Council Announcement/Plenary Speaker

Tue Oct 27, 10:30 – 12:00 • Rotterdam Hall 1 & 2

Chair(s): Sten Vollebregt (TU-Delft)

Olfactory Sensors: Four Decades of Progress, Real-World Deployment Challenges, and Future Directions

Plenary

Speaker(s): Genki Yoshikawa (National Institute for Materials Science)

Tuesday Lunch

Tue Oct 27, 12:00 – 13:00 • Shipping, Exchange & Mercurius Hall

YP Growing up in Science Panel

Tue Oct 27, 12:00 – 13:00 • J.F. Staal

Speaker(s): Ellis Meng (University of Southern California); Genki Yoshikawa (National Institute for Materials Science); Veda Sandeep Nagaraja (Tyndall National Institute); Filiberto Ricciardella (TNO)

B2L-D Chemical, Electrochemical and Gas Sensors 2

Tue Oct 27, 13:00 – 14:30 • Mees I

Chair(s): Hamida Hallil (Bordeaux University); Bérengère Lebental (Gustave Eiffel University)

Electrothermal Pumping in a Weakly Coupled Tri-Beam MEMS Resonator for Gas Sensing

Paper ID 8453

Author(s): Haythem Draoui (Loughborough University); Stephanos Theodossiades (Loughborough University); Amal Z. Hajjaj (Loughborough University); Najib Kacem (University of Franche-Comté); Antonio Di Buono (United Kingdom National Nuclear Laboratory)

Carbon Nanotube Chemiresistive Gas Sensor on Flexible and Sustainable Triacetyl Cellulose for Sub-Ppm Ethylene Detection

Paper ID 8740

Author(s): Anna Goncharenko (Free University of Bozen-Bolzano); Soufiane Krik (Free University of Bozen-Bolzano); Giuseppe Ciccone (Free University of Bozen-Bolzano); Pietro Ibba (Free University of Bozen-Bolzano); Giulia Elli (Free University of Bozen-Bolzano); Ahmed Rasheed (Free University of Bozen-Bolzano); Sahira Vasquez (Free University of Bozen-Bolzano); Franco Cacialli (Free University of Bozen-Bolzano); Niko Münzenrieder (Free University of Bozen-Bolzano); Luisa Petti (Free University of Bozen-Bolzano)

Speaker(s): Anna Goncharenko (Free University of Bozen-Bolzano)

Gas Flow Visualization Using an LSPR Gas Sensor for Mobile Robot Applications

Paper ID 8792

Author(s): Yinghao Li (Kyushu University); Lingpu Ge (Kyushu university); Masaki Ito (Kyushu University); Fumihiro Sassa (Kyushu University); Kenshi Hayashi (Kumamoto National College of Technology)

Speaker(s): Kenshi Hayashi (Kumamoto National College of Technology)

Humidity-Driven Polarity Inversion of NH₃ Sensing in Graphene Sensors: Role of Dispersant Surface Chemistry on Interflake Transport

Paper ID 8783

Author(s): Ahmad Al Shboul (École de Technologie Supérieure ÉTS); Loïc Teyssedre (École de Technologie Supérieure ÉTS); Thierry Lai Fak Yu (École de Technologie Supérieure ÉTS); Tom Rautureau (École de Technologie Supérieure ÉTS); Mohsen Ketabi (École de Technologie Supérieure ÉTS); Ricardo Izquierdo (École de Technologie Supérieure ÉTS)

Speaker(s): Ahmad Al Shboul (École de Technologie Supérieure ÉTS)

Comparative Study of Hydrogen Sensors Based on SWCNTs Modified with Pd Deposited by Different Techniques

Paper ID 8459

Author(s): Martin Sorm (University of West Bohemia in Pilsen); Jiří Štulík (University of West Bohemia); Tomáš Křenek (University of West Bohemia)

Speaker(s): Martin Sorm (University of West Bohemia in Pilsen)

A CMOS-MEMS Gas, Humidity, and Temperature Sensor Hub Utilizing UV-Activated NO₂ Sensing

Paper ID 8254

Author(s): Alexandr Laposa (Czech Technical University in Prague); Chiung-Jen Sun (National Tsing Hua University); Vojtech Povolny (Czech Technical University in Prague); YI TING CHANG (National Tsing Hua University); Ondrej Kaman (Institute of Physics of the Czech Academy of Sciences); Pavel Hazdra (Czech Technical University in Prague); Jiri Kroutil (Czech Technical University in Prague); Han-Chen Hsu (National Tsing Hua University); Sheng-Hsiang Tseng (Taiwan Semiconductor Research Institute, National Institutes...); Mei-Feng Lai (National Tsing Hua University); Weileun Fang (National Tsing Hua University)

Speaker(s): Alexandr Laposa (Czech Technical University in Prague)

B2L-B Industrial and Power Systems Applications

Tue Oct 27, 13:00 – 14:30 • Diamond I

Chair(s): Uilian José Dreyer (UTFPR/FUNTEF - 02.032.297-0001-00)

Feasibility Study of Contextual Anomaly Detection for Shear Pin Fracture in a Commercial-Scale Hydropower Plant

Paper ID 8251

Author(s): Daiki Ichinokiyama (Waseda University); Yu Fujimoto (Waseda University); Akihisa Kaneko (Waseda University); Yasuhiro Hayashi (Waseda University); Akihiko Matsui (Electric Power Development Co., Ltd.)

Speaker(s): Daiki Ichinokiyama (Waseda University)

Deep Learning-Based Real-Time Edge Predictive Maintenance via Knowledge Distillation

Paper ID 8640

Author(s): Sinian Li (Delft University of Technology); Jiaqi Liu (Signal Processing Systems, Delft University of Technology); Raj Thilak Rajan (Delft university of Technology); Wolfgang Gruber (Johannes Kepler University Linz); Andrea Natale Tallarico (ARCES, University of Bologna); Justin Dauwels (Delft University of Technology)

Speaker(s): Sinian Li (Delft University of Technology)

Portable NIR Spectroscopy for Industrial Temperature Prediction Using Physics-Enhanced CNN-LSTM Learning Under Domain Shift

Paper ID 8026

Author(s): Maedeh Nobari (Fraunhofer IPMS); Friedrich Eckert (Fraunhofer Institute for Photonic Microsystems IPMS); Heinrich Engelke (Fraunhofer Institute for Photonic Microsystems IPMS); Ireneusz Jablonski (Fraunhofer Institute for Photonic Microsystems IPMS)

Speaker(s): Maedeh Nobari (Fraunhofer IPMS)

Sensor-Based Autonomous Setpoint Optimization: A Framework Demonstrated with Response Surface Methodology and Bayesian Optimization on Membrane Water Treatment Units

Paper ID 8684

Author(s): Nick Schäuble (Karlsruhe University of Applied Sciences); Jonas Stelzer (Karlsruhe University of Applied Sciences); Johannes Schenk (Karlsruhe University of Applied Sciences); Jan Hoinkis (Karlsruhe University of Applied Sciences); Jürgen Wöllenstein (Albert Ludwig University of Freiburg); Markus Graf (University of Hamburg)

Speaker(s): Jonas Stelzer (Karlsruhe University of Applied Sciences)

Computing the Residual Life of Circuit Breakers from Travel Curve Sensor Data

Paper ID 8098

Author(s): Ralf Gitzel (Corporate Research, ABB); Mona Fuhrländer (ABB Corporate Research); Arvid Holsmöller (Former intern at Corporate Research, ABB)

Speaker(s): Mona Fuhrländer (ABB Corporate Research)

Physics-Driven PLC Sensing for Power Grid Health Monitoring

Paper ID 8855

Author(s): Abdelhak Boudehane (CEA-List / Paris-Saclay University); Mariem Slimani (Université Paris-Saclay, CEA, List); Wafa Ben Hassen (Université Paris-Saclay, CEA, List)

Speaker(s): Abdelhak Boudehane (CEA-List / Paris-Saclay University)

B2L-I Novel Sensors Systems for Sustainable Agri-Food and Environmental Applications - Environment

Tue Oct 27, 13:00 – 14:30 • Penn II

Chair(s): Gregoire Herzog (CNRS); Pierre Lovera (Tyndall National Institute)

Exposome Research at CEA-Leti: An Overview of New Technologies for Monitoring Human Exposure

Invited

Paper ID 8596

Author(s): Pascal Mailley (CEA-Leti)

Development and Prototyping of an AgNW-Modified Screen-Printed Electrochemical Sensor for Selective Nitrate Measurement

Paper ID 8327

Author(s): Farbod Aleaziz (University of British Columbia); Fariborz Taghipour (UBC)

Speaker(s): Farbod Aleaziz (University of British Columbia)

Sensing Cattle Methane Emission Using Resonance Scaling of Eructation Sounds

Paper ID 8488

Author(s): Yujia Hu (University of Tokyo); Jarred Fastier-Wooler (University of Tokyo); Shun Muramatsu (The University of Tokyo); Michitaka Yamamoto (University of Tokyo); Toshihiro Itoh (University of Tokyo)

Speaker(s): Toshihiro Itoh (University of Tokyo)

Comparison of PVC and Silicone Membranes on Nb₂O₅ and Ta₂O₅ ISFETs for K⁺ and NO₃⁻ Sensing

Paper ID 8817

Author(s): Matthias Wambold (Fraunhofer Institute for Photonic Microsystems, 01129 Dresde...); Christopher Beale (Fraunhofer Institut IPMS); Gonzalo Fenoy (Fraunhofer Institute for Photonic Microsystems IPMS); Olaf Rüdiger Hild (Fraunhofer Institute for Photonic Microsystems IPMS)

Speaker(s): Matthias Wambold (Fraunhofer Institute for Photonic Microsystems, 01129 Dresde...)

B2L-C Physical Sensors 6 (Option B)

Tue Oct 27, 13:00 – 14:30 • Diamond II

Chair(s): Patrick French (TU Delft); Sang-Seok Lee (Tottori University)

Design and Characterization of a Multi-Layer FPC Eddy-Current Sensor for Micrometric Distance Measurement Applications Exploiting a Low-Cost Commercial Converter

Paper ID 9056

Author(s): Nicola Iacono (STIIMA - National Research Council of Italy); Gianmauro Fontana (National Research Council); Giacomo Bianchi (National Research Council); Matteo Lancini (University of Brescia)

Flexible MXene/MoS₂/Lig Pressure Sensor with Extended Pressure Range and Near-Linear Response

Paper ID 9077

Author(s): Fan Wu (Laboratory of Intelligent Microsystems, Beijing Information ...); Mengyao Tian (Beijing Information Science and Technology University); Tiantian Lv (Beijing Information Science and Technology University); Yaqi Wang (Beijing Information Science and Technology University); Guodong Zhang (Beijing Information Science and Technology University); Yingjie Chen (Laboratory of Intelligent Microsystems, Beijing Information ...); Misheng Liang (Beijing Information Science and Technology University); Rui You (Beijing Information Science and Technology University)

Speaker(s): Fan Wu (Laboratory of Intelligent Microsystems, Beijing Information ...)

An SIW Sensor with Environmental Compensation for Permittivity Measurement or High-Sensitivity Displacement Sensing

Invited Pre-Published Journal Paper

Paper ID 9128

Author(s): Ali-Reza Moznebi; S. K. Abdul Alim (University of Alberta); Rashid Mirzavand (University of Alberta)

Speaker(s): Ali-Reza Moznebi

A Field-Deployable Sensing Platform for Online Monitoring of Transmission Tower Grounding Systems

Paper ID 9131

Author(s): Edwin Tonolo (Lactec); Marcos Rambo (Lactec); Rômulo Lopes (Lactec); André Ferreira (Lactec); Leandro Mario (Lactec); Alexandre Leal (Lactec/UTFPR); André Eugenio Lazzaretti (Federal University of Technology-Paraná); Henry Salamanca (Lactec)

Speaker(s): Edwin Tonolo (Lactec)

Visualization of Frequency-Varying Mechanical Vibrations via Automatic Resonance Tuning

Invited Pre-Published Journal Paper

Paper ID 9161

Author(s): Tomoya Yoshida (Okayama Prefectural University); Takuya Yamakawa (Aoyama Gakuin University); Yosuke Kurihara (Aoyama Gakuin University); Kazuyuki Kobayashi (Hosei University); Kajiro Watanabe (Hosei University)

Speaker(s): Takuya Yamakawa (Aoyama Gakuin University)

B2L-G Sensor Materials, Fabrication and Packaging 1

Tue Oct 27, 13:00 – 14:30 • Goudriaan I and II

Chair(s): Sharmistha Bhadra (McGill University, Canada); Christopher Beale (Fraunhofer Institut IPMS)

Femtosecond Laser-Induced Chemical Etching for Suppressing Anisotropic Wet Etching Defects in Quartz-Based MEMS Fabrication

Paper ID 8097

Author(s): FEIHU FANG (Southeast University); Changcheng Zhou (Southeast University); Xinyu Zhu (Southeast University); Jinxing Liang (Southeast University)

Speaker(s): FEIHU FANG (Southeast University)

Short-Wave Infrared Colloidal Quantum Dot Photodiodes Directly Fabricated on Silicon Toward Monolithic Integration

Paper ID 8173

Author(s): Weinan Yin (Zhejiang University); Chenfeng Zheng (Zhejiang University); Yu Yang (Zhejiang University); Xinyi Liu (Zhejiang University); Zesheng Gou (Zhejiang University); Yunlong Li (Zhejiang University)

Speaker(s): Weinan Yin (Zhejiang University)

Surfactant-Controlled Wet Etching of Z-Cut Quartz for Enhanced Performance of Pendulous Resonant Accelerometer

Paper ID 8198

Author(s): Ai Jiabin (Xi'an Jiaotong University); Hong Xue (Xi'an Jiaotong University); Bo Li (Xi'an Jiaotong University); Bing Bai (Xi'an Jiaotong University); Cun Li (Xi'an Jiaotong University); Yulong Zhao (Xi'an Jiaotong University, State Key Laboratory for Manufact...)

Speaker(s): Ai Jiabin (Xi'an Jiaotong University)

Thin Film Hydrogel Vapochromic Coordination Polymers: Immobilization and Ammonia Sensing

Paper ID 8322

Author(s): David Stevens (Simon Fraser University); Daniel Leznoff (Simon Fraser University); Bonnie Gray (Simon Fraser University)

Electro-Thermal Carbonization of CMOS Compatible Nanoelectrodes for Cell Based Sensing

Paper ID 8333

Author(s): Farin Rahman (University of Tennessee, Knoxville); Nickolay Lavrik (Oak Ridge National Laboratory); Nicole McFarlane (University of Tennessee, Knoxville)

Speaker(s): Farin Rahman (University of Tennessee, Knoxville)

CuInSe₂ Quantum Dot-Coated Silicon Nanowire Photodetectors with Enhanced NIR Responsivity

Paper ID 9149

Author(s): Juwon Yun (Jeonbuk National University); Neunghee Han (Jeonbuk National University); Jihun Lee (Jeonbuk National University); Ji-Hoon Lee (Jeonbuk National University); M. Meyyapan (Indian Institute of Technology Guwahati); Woonhyuk Baek (Jeonbuk National University); Kihyun Kim (Jeonbuk National University)

Speaker(s): Juwon Yun (Jeonbuk National University)

B2L-H Sensor Phenomenology, Modeling and Evaluation 2

Tue Oct 27, 13:00 – 14:30 • Penn I

Chair(s): Elfed Lewis (University of Limerick); Ravi Prakash (Carleton University)

Molecular Imprinted Polymer-Coated Optical Fiber Sensor for Real-Time Detection and Reduction of Oxalic Acid

Paper ID 8766

Author(s): Thiraset Suksaenkraisorn (Chulalongkorn University); Adulroj Sreshtabutra (Chulalongkorn University); Chanchai Boonla (Chulalongkorn University); Sushanta K. Mitra (University of Waterloo); Charusluk Vipavakit (Chulalongkorn University)

Speaker(s): Thiraset Suksaenkraisorn (Chulalongkorn University)

Multi-Mode BVD Modelling for Bio-Chemically Functionalized QCM Sensors

Paper ID 8806

Author(s): Annesha Mazumder (IMS Lab, University of Bordeaux (CNRS UMR 5218)); Shreyas Deshpande (University of bordeaux); Francesca Izzo (University of Bordeaux); Abdessamad Grirrane (Polytechnic University of Valencia); Hermenegildo Garcia Gomez (Polytechnic University of Valencia); Hamida Hallil (Bordeaux University)

Speaker(s): Shreyas Deshpande (University of bordeaux)

Bifurcation-Based Sensing in a MEMS Device

Paper ID 8757

Author(s): Samuel Kirkbride (University of Cambridge); Ashwin Seshia (University of Cambridge)

Towards a Hybrid Capacitive-Piezoelectric Tactile Taxel for Static and Dynamic Triaxial Force Sensing

Paper ID 9021

Author(s): Kalash Chandakapure (Tata Consultancy Services); Shreya Bhadauriya (Tata Consultancy Services); Biswanath Panda (NCFlexE, Indian Institute of Technology Kanpur); Ashutosh Tripathi (NCFlexE, Indian Institute of Technology Kanpur); Baquer Mazhari (NCFlexE, Indian Institute of Technology Kanpur); Yashowanta Mohapatra (NCFlexE, Indian Institute of Technology Kanpur); Paramita Kar Choudhury (Tata Consultancy Services); Titas Bera (TATA Consultancy Services)

Speaker(s): Titas Bera (TATA Consultancy Services)

Plasma Detection and Discharge Recovery Using Contactless Microwave Sensor

Paper ID 8746

Author(s): Zachary Gellner (University of Alberta); Masoud Baghelani (University of Alberta)

Speaker(s): Zachary Gellner (University of Alberta)

B2L-F Sensor Systems: Signals, Processing and Interfaces (Option B)

Tue Oct 27, 13:00 – 14:30 • Leeuwen I and II

Chair(s): Michael Sherburne (Johns Hopkins Applied Physics Laboratory); Kianoush Rassels (TU Delft)

Conductance-Domain in Situ Single-Point Calibration for an FSR Array Embedded Inside a Handball

Paper ID 8353

Author(s): Yuki Yoshinaga (Tokyo Metropolitan University); Tomoo Kikuchi (Tokyo Metropolitan University); Eri Sato-Shimokawara (Tokyo Metropolitan University)

Speaker(s): Yuki Yoshinaga (Tokyo Metropolitan University)

High-Resolution Two-Target Indoor Tracking Using Conv-TasNet on Ceiling-Mounted PIR Analog Signals

Paper ID 9120

Author(s): Ming-Hung Kuo (National Chung Hsing University); Chih-Yu Wen (National Chung Hsing University)

Wirelessly Powered Embeddable Devices for Elastic-Wave-Based Internal Defect Detection in Reinforced Concrete

Paper ID 9122

Author(s): Ryo Shirai (Kyoto University); Yijing Liao (Kyoto University); Shunsuke Ikenaka (Kyoto University); Hisafumi Asaue (Kyoto University); Tomoki Shiotani (Kyoto University); Masanori Hashimoto

Speaker(s): Yijing Liao (Kyoto University)

Privacy-Preserving Gait Identification via Center-of-Gravity Oscillation Analysis on a Floor-Based Sensing Platform

[Invited Pre-Published Journal Paper](#)

Paper ID 9134

Author(s): Ryota Ozaki (Aoyama Gakuin University); Kodai Ito (College of Science and Engineering, Aoyama Gakuin University); Mai Kamihori (Graduate School of Science and Engineering, Aoyama Gakuin University); Yuichi Itoh (College of Science and Engineering, Aoyama Gakuin University)

Speaker(s): Ryota Ozaki (Aoyama Gakuin University)

3-D Magnetic Field Camera with Subsecond Temporal Resolution

Invited Pre-Published Journal Paper

Paper ID 9151

Author(s): Fynn Foerger (University Medical Center Hamburg-Eppendorf); Marija Boberg (University Medical Center Hamburg Eppendorf, Germany); Niklas Hackelberg (University Medical Center Hamburg-Eppendorf, Technical University Hamburg, Fraunhofer IMTE); Philip Heinisch (Technische Universität Braunschweig, PHYMAG GmbH); Katharina Ostaszewski (Technische Universität Braunschweig, PHYMAG GmbH); Jonas Faltinath (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Philip Suskin (University Medical Center Hamburg-Eppendorf, Technical University Hamburg); Florian Thieben (Hamburg University of Technology); Fabian Mohn (Technische Universität Hamburg); Paul Jürß (University Medical Center Hamburg-Eppendorf; Hamburg University of Technology); Martin Möddel (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Tobias Knopp (Hamburg University of Technology / University Medical Center Hamburg-Eppendorf)

Speaker(s): Fynn Foerger (University Medical Center Hamburg-Eppendorf)

Sensors for Intelligent Robotic and Humanoid systems

Tue Oct 27, 13:00 – 17:15 • Van Oldenbarnevelt

Speaker(s): Enrico Rosario Alessi (STMicroelectronics S.r.l.); Michele Magno (ETH Zurich); Calogero Maria Oddo (Sant'Anna School of Advanced Studies)

B2L-E Wearable Sensors and Systems 1: Vital Signs Monitoring (Option B)

Tue Oct 27, 13:00 – 14:30 • Mees II

Chair(s): Avishek Adhikary (Indian Institute of Technology Bhilai); Michael McShane (Texas A&M University)

Blood Pressure Estimation Using Fiber Bragg Grating Sensors

Paper ID 9057

Author(s): Mariaconsiglia Cuomo (University of Naples 'Parthenope'); Elena De Vita (University of Naples 'Parthenope'); Agostino Iadicco (University of Naples Parthenope); Stefania Campopiano (Università degli studi di Napoli "PARTHENOPE")

Speaker(s): Elena De Vita (University of Naples 'Parthenope')

Fingertip Pulse Wave Detection with a Simple Planar Microwave Sensor

Paper ID 9062

Author(s): Amirhossein Karami Horestani (GEMMA/CIMITEC, Universitat Autònoma de Barcelona); Ferran Paredes (GEMMA/CIMITEC, Universitat Autònoma de Barcelona); Karl Adolphs-Saura (Universitat Autònoma de Barcelona); Gerard Siso (Universitat Autònoma de Barcelona); Ferran Martín (GEMMA/CIMITEC, Universitat Autònoma de Barcelona)

Speaker(s): Amirhossein Karami Horestani (GEMMA/CIMITEC, Universitat Autònoma de Barcelona)

Toward Smart Textiles: Carbon-Based Thermistor on Buckram Fabric for Body Temperature Monitoring

Paper ID 9082

Author(s): Aiman Mahar (Sapienza University of Rome); Dro Boodaghian (Sapienza University of Rome); Alessandro Giuseppe D'Aloia (Sapienza University of Rome); Hossein Cheraghi Bidsorkhi (University of Sassari); Maria Sabrina Sarto (Sapienza University of Rome)

Speaker(s): Aiman Mahar (Sapienza University of Rome)

Wrist Temperature-Based Sleep Detection for Maritime Environments

Paper ID 9093

Author(s): Giuseppe Longo (University of Salerno); Serena Ceccanti (University of Verona); Berenice Charrez (Universite de Caen Normandie); Gaelle Quarck (Universite de Caen Normandie); Alfredo Rubino (Universita di Salerno); Ugo Faraguna (University of Pisa); Rosalba Liguori (Universita di Salerno)

Speaker(s): Giuseppe Longo (University of Salerno)

The Role of the Acceleration Plethysmography (APG) Signal for Vascular Aging Analysis with a Modular High-Sampling-Rate Wristband

Paper ID 9094

Author(s): Gianluca Diana (University of Palermo); Giuseppe Longo (University of Salerno); Rosalba Liguori (Universita di Salerno); Alfredo Rubino (Universita di Salerno); Francesco Scardulla (University of Palermo); Leonardo D'Acquisto (University of Palermo)

Speaker(s): Giuseppe Longo (University of Salerno)

A Wearable Single-Arm Electrocardiograph System: Design and Experimental Evaluation

Invited Pre-Published Journal Paper

Paper ID 9154

Author(s): Anna Marcucci (University of Pavia / Fondazione IRCCS Policlinico San Matteo Pavia); Enrico Baldi (IRCCS Policlinico San Matteo Pavia); Rik Vullings (Eindhoven University of Technology); Giovanni Magenes (Universit  degli-Studi-di-Pavia); Anna Vizziello (University of Pavia)

Speaker(s): Anna Marcucci (University of Pavia / Fondazione IRCCS Policlinico San Matteo Pavia)

B3P-O Actuators, Energy Transfer and Powering

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

Chair(s): Mark Cheng (Indiana University); Pai-Yen Chen (University of Illinois)

A High-Precision Closed-Loop Modulation Framework with <0.02° Resolution for MEMS-Based Generic Actuation Platform

Poster

Paper ID 8019

Author(s): Yifan Wang (State Key Laboratory of Integrated Chips and Systems, Fudan ...); Yuan Sui (University of California, Berkeley); Zeyu Hao (University of California, Berkeley); Haoning Tang (University of California, Berkeley); Yuan Cao (UC Berkeley)

Speaker(s): Yifan Wang (State Key Laboratory of Integrated Chips and Systems, Fudan ...)

Integrated Acoustic Energy Transfer for Sensor Integrating Bolts

Poster

Paper ID 8131

Author(s): Dirk Leiacker (Technische Universit t Darmstadt); Felix Herbst (Technische Universit t Darmstadt); Fabian Deeg (Karlsruhe Institute of Technology - IPEK Institute of Product Engineering); Julian Peters (Karlsruher Institute of Technology); Sven Matthiesen (Karlsruher Institut f r Technologie); Mario Kupnik (Technical University Darmstadt); Klaus Hofmann (Technische Universit t Darmstadt); David Riehl (Technische Universit t Darmstadt)

Speaker(s): Dirk Leiacker (Technische Universit t Darmstadt)

A 47.3-nW Fast Dual-Side Self-Tracking Thermoelectric Energy-Harvesting Interface with Hybrid ZCD, MPPT, and Cold-Start

Poster

Paper ID 8317

Author(s): SHIYUAN SUN (Kyushu University); Takeaki Yajima (Kyushu University)

Ultra-Low-Power Energy Harvesting Technique for Remote Power-Over-Fiber Systems

Poster

Paper ID 8347

Author(s): Riku Matsumoto (Mie University); Daniel Akira Ando (Mie University); Tetsuya Manabe (Mie University)

Speaker(s): Riku Matsumoto (Mie University)

Battery Consumption Estimation of UAVs Using Telemetry Data and Machine Learning-Based Approach

Poster

Paper ID 8407

Author(s): Semih Yıldız (Marmara University); Ahmet Tuğrul Berber (Marmara University); Fulya  allıalp (Marmara University)

Speaker(s): Fulya  allıalp (Marmara University)

Development and Modeling of a Multi-Sided Triboelectric Nanogenerator for Self-Powered Marine Sensors

Poster

Paper ID 8548

Author(s): Mohammad Al Saaideh (Memorial University of Newfoundland); Mohammad Al Janaideh (University of Guelph); Lihong Zhang (Memorial University)

Speaker(s): Lihong Zhang (Memorial University)

Ferroelectric Fluid-Modified PVDF Composites for Self-Powered Pressure Sensing and Energy Harvesting

Poster

Paper ID 8558

Author(s): Kaustav Jit Bora (Indian Institute of Technology Delhi); Aloka Sinha (Indian Institute of Technology Delhi)

Speaker(s): Kaustav Jit Bora (Indian Institute of Technology Delhi)

B3P-J Chemical, Electrochemical and Gas Sensors 5

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

Chair(s): Santiago Marco (Institute for Bioengineering of Catalonia); Radislav Potyrailo (GE Vernova Advanced Research)

A Consumer-Grade 3D Printer-Based Platform for Automated Electrochemical Sensor Modification, Characterization and Testing

Poster

Paper ID 8497

Author(s): Richard Murray (Tyndall National Institute); Alan O Riordan (Tyndall National Institute)

Speaker(s): Richard Murray (Tyndall National Institute)

Ambient Temperature Catalytic Hydrogen Sensor Using Spark-Ablation of Porous Platinum

Poster

Paper ID 8528

Author(s): Jan kleine Piening (University of Bremen); Tim Mike de Rijk (University of Bremen); Michael Vellekoop (University Bremen, IMSAS)

Speaker(s): Jan kleine Piening (University of Bremen)

Dry Film Photoresist for the Fabrication of Microband Electrode Arrays for Electrochemical Detection of Pb²⁺

Poster

Paper ID 8599

Author(s): Amira Mahmoud (CNRS, University of Lorraine); Irina Terrero-Rodriguez (CNRS, University of Lorraine); Mariela Brites-Helu (CNRS, University of Lorraine); Gregoire Herzog (CNRS)

Speaker(s): Gregoire Herzog (CNRS)

Peptide Gate Functionalization of Electrolyte-Gated Transistors for Polystyrene Detection

Poster

Paper ID 8647

Author(s): Giulia Elli (Free University of Bozen-Bolzano); Manuela Ciocca (Free University of Bozen-Bolzano); Giorgio Mattana (Université Paris Cité); Benoît Piro (ITODYS Laboratory - Paris Cité University); Vincent Noël (Université Paris Cité); Paolo Lugli (Free University of Bozen-Bolzano); Luisa Petti (Free University of Bozen-Bolzano)

Speaker(s): Giulia Elli (Free University of Bozen-Bolzano)

Multi Parametric MEMS Platform for Characterization of Hydrogen-Enriched Natural Gases

Poster

Paper ID 8653

Author(s): Melania Coronese (EPFL-STI-IGM NEMS); Luis Guillermo Villanueva (ANEMS Lab, EPFL); Christof Huber (TrueDyne Sensors AG)

Speaker(s): Melania Coronese (EPFL-STI-IGM NEMS)

Thin Film Pt-TiO₂-TiN Schottky Diode Hydrogen Gas Sensor

Poster

Paper ID 8683

Author(s): Michal Patrnčík (Slovak Academy Of Sciences, IEE); Mohammad Dehghan (Institute of Electrical Engineering SAV); Matej Horský (Slovak Academy of Sciences); Tomáš Ščepka (Slovak Academy of Sciences); Tibor Izsák (Slovak Academy of Sciences); Peter Hutár (Slovak Academy of Sciences); Peter Nádaždy (Slovak Academy of Sciences); Peter Švec Jr. (Slovak Academy of Sciences); Muhammad Aqif (Comenius University in Bratislava); Tomáš Plecenik (Comenius University in Bratislava); Boris Hudec (Slovak Academy of Sciences)

Speaker(s): Michal Patrnčík (Slovak Academy Of Sciences, IEE)

Room-Temperature Engineered ZnO Nanoparticles for Dual-Mode Flexible Styrene Sensors

Poster

Paper ID 8721

Author(s): Fazia Mechai (École de Technologie Supérieure ÉTS); Fatima Zohra Baali (École de Technologie Supérieure ÉTS); Marieme Thioro Faye (École de Technologie Supérieure ÉTS); Bernice Nderego (École de Technologie Supérieure ÉTS); Mirolla Tadrous (École de Technologie Supérieure ÉTS); Roua Ben Arbia (École de Technologie Supérieure ÉTS); Mohsen Ketabi (École de Technologie Supérieure ÉTS); Ahmad Al Shboul (Ecole de technologie superieure ETS); Ricardo Izquierdo (École de Technologie Supérieure ÉTS)

Speaker(s): Ahmad Al Shboul (Ecole de technologie superieure ETS)

Graphene Decorated with Octahedral Tantalum Bromide Clusters for Room Temperature Detection of Ammonia

Poster

Paper ID 8756

Author(s): Anjum Nisar (UNIVERSITAT ROVIRA I VIRGILI - ESQ9350003A); Alejandro Santos-Betancourt (University of Rovira i Virgili); Jhon Sebastián Hernández (Polytechnic University of Valencia); Frank Güell (ENFOCAT, Universitat de Barcelona); Marta Feliz (Polytechnic University of Valencia); Eduard Llobet (Universitat Rovira i Virgili)

Speaker(s): Anjum Nisar (UNIVERSITAT ROVIRA I VIRGILI - ESQ9350003A)

Reservoir-Like Localized Surface Plasmon Resonance Gas Sensor for Visualizing Analyte-Dependent Response Patterns

Poster

Paper ID 8955

Author(s): Masaki Ito (Kyushu University); Fumihiro Sassa (Kyushu University); Kenshi Hayashi (Kumamoto National College of Technology)

Speaker(s): Masaki Ito (Kyushu University)

Diffusion-Controlled Vapor Absorption in Membrane-Type Surface Stress Sensors

Poster

Paper ID 8957

Author(s): Yohsuke Shiiki (National Institute for Materials Science (NIMS)); Genki Yoshikawa (National Institute for Materials Science); Kosuke Minami (National Institute for Materials Science)

Speaker(s): Yohsuke Shiiki (National Institute for Materials Science (NIMS))

Discrimination of Hydrogen, Ammonia and Acetone by Ionic Liquid/MoS₂ Composite with Pt Electrodes

Poster

Paper ID 9025

Author(s): JIAHAO QIN (Keio University); Takashi Ikuta (Tokushima University); Takahisa Tanaka (Keio University)

Speaker(s): JIAHAO QIN (Keio University)

Self-Compensated Monolithic AlGaIn/GaN HEMT Dual Sense-Reference Sensor Architecture for Robust Hydrogen Detection

Poster

Paper ID 8737

Author(s): Karim Bouzid (Lafayette Institute); Sri Saran Venkatachalam (Lafayette Institute); Tarik Moudakir (Lafayette Institute); Abhishek Juyal (Lafayette Institute); Safa Othmani (Lafayette Institute); Mickaël Petit (Lafayette Institute); Simon Gautier (Lafayette Institute)

Speaker(s): Karim Bouzid (Lafayette Institute)

Electronic Stabilization of APCVD-Grown MoSe₂ by Airbrushed Graphene Nanoplatelets for Selective Room-Temperature NO₂ Detection

Poster

Paper ID 8774

Author(s): Mohamed Elsheshtawy (Universitat Rovira i Virgili); Eduard Llobet (Universitat Rovira i Virgili); Fatima Ezahra Annanouch (Universitat Rovira i Virgili)

Speaker(s): Mohamed Elsheshtawy (Universitat Rovira i Virgili)

High-Temperature Operation for Improving Concentration Estimation Accuracy in Thermal Conductivity Gas Sensors Under CO₂ Interference

Poster

Paper ID 8012

Author(s): Naho Minowa (ROHM Co Ltd); Maiko Hatano (ROHM Co., Ltd.); Shunsuke Akasaka (ROHM Co., Ltd.)

Speaker(s): Naho Minowa (ROHM Co Ltd)

B3P-N Measurement Systems and Instrumentation

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall
Chair(s): Bernhard Jakoby (Johannes Kepler University Linz)

Load Monitoring of Direct-on-Line Asynchronous Motors Using a Search Coil

Poster

Paper ID 8402

Author(s): Felix Sutton (ABB Research Switzerland); Marius Rutkevičius (ABB Inc); Rajib Mikail (ABB Research USA); Stefan Rakuff (ABB Research USA); Sodiq Agoro (ABB Research USA)

Speaker(s): Marius Rutkevičius (ABB Inc)

Design and Preliminary Characterization of an Acquisition Node for a Vibration Monitoring System in Luxury Yachts

Poster

Paper ID 8734

Author(s): Luca Boccacci (University of Pisa - Dip. Ingegneria Informazione); Fabio Fanucchi (University of Pisa); Roberto Di Rienzo (University of Pisa); Giovanni Palamà (SailADV Group); Roberto Saletti (University of Pisa)

Speaker(s): Luca Boccacci (University of Pisa - Dip. Ingegneria Informazione)

Dual-Plane Multielectrode Conductivity Sensor for Flow Velocity Profiling

Poster

Paper ID 8956

Author(s): Christian Niederl (Johannes Kepler University Linz); Stefan Puttinger (Johannes Kepler University Linz); Marco Da Silva (Johannes Kepler University Linz)

Speaker(s): Marco Da Silva (Johannes Kepler University Linz)

Automated Platform for Dynamic Hydrogen Testing of Crossbar Gas Sensor Arrays

Poster

Paper ID 8658

Author(s): Mohammad Dehghan (Institute of Electrical Engineering SAV); Ivan Kundra (Slovak Academy of Sciences); Michal Patrnčík (Slovak Academy Of Sciences, IEE); Boris Hudec (Slovak Academy of Sciences)

Speaker(s): Mohammad Dehghan (Institute of Electrical Engineering SAV)

Tidal Volume Estimation Using an Optimized Tracheal Acoustic Sensor and Machine Learning

Poster

Paper ID 8698

Author(s): Ma. Stella Grace B. Lequiron (Korea Research Institute of Standards and Science); Soo-In Choi (Korea Research Institute of Standards and Science); Min-Young Kim (Korea Research Institute of Standards and Science); IL DOH (KRISS)

Speaker(s): IL DOH (KRISS)

B3P-M Microfluidics and Biosensors 2 (Option B)

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall
Chair(s): Regina Luttge (Eindhoven University of Technology)

Optical Microfluidics Flowmeter Based on Liquid Crystal Realignment and Image Processing

Poster

Paper ID 8681

Author(s): Fatemeh Majidi (University of Tehran); Reza Askari Moghadam (Sorbonne University); Mohammad Mohammadi Masoudi (University of Tehran)

Speaker(s): Reza Askari Moghadam (Sorbonne University)

A Low-Cost Non-Enzymatic Sensor for Lactic Acid Detection Based on Graphene/CuO Nanocomposites

Poster

Paper ID 8989

Author(s): Monah Holdefer (Santa Catarina State University); Mariane Bosenbecker (Santa Catarina State University); Pedro Bertemes-Filho (UDESC)

Speaker(s): Pedro Bertemes-Filho (UDESC)

Multi-Criteria Optimization of Cu-Modified Screen-Printed Carbon Electrodes Towards Salivary Creatinine PoC Monitoring

Poster

Paper ID 9055

Author(s): Beatrice Francalanci (University of Florence); Erika Rovini (Università degli Studi di Firenze); Marie Celine Lefevre (Italian Institute of Technology); Mirko Prato (Italian Institute of Technology); Gianni Ciofani (Italian Institute of Technology); Filippo Cavallo (University of Florence)

Speaker(s): Beatrice Francalanci (University of Florence)

Simultaneous Electrochemical Detection of Cardiac Troponin T and Lactic Acid Using a Dual-Template MIP Sensing Electrode with Nafion-Assisted Signal Decoupling

Poster

Paper ID 9073

Author(s): Chih-Hung Lin (National Yang Ming Chiao Tung University); Yu-Ting Cheng (National Yang Ming Chiao Tung University); Chih-Kuo Lee (National Taiwan University Hospital); Hsiao-En Tsai (National Taiwan University Hospital)

Speaker(s): Yu-Ting Cheng (National Yang Ming Chiao Tung University)

Electrochemical Impedance-Based Evaluation of Antibiotic Susceptibility in Bacterial Cells and Biofilms Grown on Gold Electrodes

Poster

Paper ID 9087

Author(s): Rhea Patel (Goa University); Walusha Esther Cardozo (Goa University)

Speaker(s): Rhea Patel (Goa University)

Broadband Disposable Biosensors Based on Dielectric Waveguide Ring Resonators

Invited Pre-Published Journal Paper Poster

Paper ID 9146

Author(s): Kristof Dausien (Ruhr University Bochum)

Speaker(s): Kristof Dausien (Ruhr University Bochum)

Machine Learning-Enhanced Flexible IL-6 Sensor for Rapid Threshold Detection

Invited Pre-Published Journal Paper Poster

Paper ID 9168

Author(s): Moritz Ploner (Free University of Bozen-Bolzano); Mattia Stighezza (University of Parma); Bajramshahe Shkodra (Sensing Technology Laboratory, Libera Università di Bolzano); Valentina Bianchi (University of Parma); Tobias Antrack (Technische Universität Dresden); Lia Vanzetti (Fondazione Bruno Kessler (FBK)); Roberto Canteri (Fondazione Bruno Kessler (FBK)); Daniele Resnati (Empatica Srl); Andrea Boni (University of Parma); Ilaria De Munari (University of Parma); Paolo Lugli (Free University of Bozen-Bolzano); Luisa Petti (Free University of Bozen-Bolzano)

Speaker(s): Moritz Ploner (Free University of Bozen-Bolzano)

Capacitive Lock-In Biosensor for Label-Free Detection of NT-proBNP

Poster

Paper ID 9184

Author(s): Lotte De Schrijver; Ali Saeidi (Xsensio SA); Adrian Mihai Ionescu (École Polytechnique Fédérale de Lausanne)

B3P-K Optical Sensors 5

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas)

Optimized Optical Adaptive Depth Steering to Mitigate Morphological Variance in Hemoconcentration Monitoring

Poster

Paper ID 8027

Author(s): Murad Althobaiti (Imam Abdulrahman Bin Faisal University); Gameel Saleh (Imam Abdulrahman bin Faisal University)

Speaker(s): Murad Althobaiti (Imam Abdulrahman Bin Faisal University)

A Distributed Multi-Camera System for Large-Area Outdoor 3D Flight Trajectories Reconstruction of Flying Objects

Poster

Paper ID 8073

Author(s): Junhao Li (Hiroshima university); Kohei Shimasaki (Hiroshima University); Idaku Ishii (Hiroshima University)

Speaker(s): Junhao Li (Hiroshima university)

Printed Polymeric Waveguides for the Fabrication of Lossy Mode Resonance Sensors

Poster

Paper ID 8083

Author(s): Frank Martínez Abreu (Public University of Navarre); Jose Carlos Valdes Fernandez (Public University of Navarre); Jesus Maria Corres (Public University of Navarre); César Elosúa (Public University of Navarre); Ignacio Raul Matías (Public University of Navarre); Francisco J. Arregui (Public University of Navarre)

Speaker(s): Frank Martínez Abreu (Public University of Navarre)

A Computational CMOS Image Sensor with PWM Pixels and On-Sensor Kernel Decomposition for the First Layer of Neural Network

Poster

Paper ID 8105

Author(s): Jiajun Li (University of British Columbia); Yi Luo (vivo Mobile Communication Co., Ltd.); Reza Molavi (University of British Columbia & Google Quantum AI); Shahrar Mirabbasi (The University of British Columbia)

Speaker(s): Shahrar Mirabbasi (The University of British Columbia)

LiDAR-Based Detection of Centimeter Snow Depth Variations in Wind-Affected Alpine Terrain

Poster

Paper ID 8124

Author(s): Stefan Wallner (FH Joanneum Industrial Mgt.); Alexander Bergmann (University of Technology Graz); Stefan Muckenhuber (FH JOANNEUM Gesellschaft mbH); Thomas Goelles (Virtual Vehicle Research GmbH); Marius O. Jonassen (University Centre in Svalbard); Siiri Wickström (Skred AS)

Speaker(s): Stefan Wallner (FH Joanneum Industrial Mgt.)

Accurate Deflection Measurement of Cable-Stayed Bridges Using Diagonal Grating Markers

Poster

Paper ID 8165

Author(s): Shien Ri (National Institute of Advanced Industrial Science and Technology); Nobuyuki Toyama (National Institute of Advanced Industrial Science and Technology); Nobuyuki Toyama (National Institute of Advanced Industrial Science and Technology); Norihiko Ogura (Kyoto University); Yuji Konishi (CORE Institute of Technology)

Speaker(s): Shien Ri (National Institute of Advanced Industrial Science and Technology)

Wide-Field 3D Displacement Measurement by Sampling Moiré with a Dual Fisheye Lens System

Poster

Paper ID 8184

Author(s): Yuma Endo (Tokyo University of Science); Shien Ri (National Institute of Advanced Industrial Science and Technology); Shinji Ogihara (Tokyo University of Science)

Speaker(s): Yuma Endo (Tokyo University of Science)

Influences of an UAV on a Fringe Projection System and Concept for Compensation Methods

Poster

Paper ID 8193

Author(s): Jan Simon (Leibniz Universität, IMR Mess- & Regelungstechnik); Markus Kästner (Universität Hannover)

Speaker(s): Jan Simon (Leibniz Universität, IMR Mess- & Regelungstechnik)

Redundant Camera-Laser Triangulation with Geometric Scaling for Optical Distance Estimation

Poster

Paper ID 8286

Author(s): Marie Schweim (Helmut-Schmidt-University); Anne Katrin Schweim (Helmut Schmidt University/University of the Federal Armed Forces Hamburg); Joachim Horn (Helmut Schmidt University/University of the Federal Armed Forces Hamburg)

Speaker(s): Marie Schweim (Helmut-Schmidt-University)

Noise Characterization of a Serrodyne-Modulated Open-Loop Fiber Optic Gyroscope with Balanced Photodetection

Poster

Paper ID 8326

Author(s): Ferdinando D'Apice (Parthenope University); Rizwan Zahoor (CNR-INO, National Research Council, National Institute of Optics - Italy); Marialuisa Capezzuto (National Research Council of Italy); Pierre Martin (Polytech Montpellier); Gianluca Gagliardi (National Research Council of Italy); Luigi Santamaria Amato (Agenzia Spaziale Italiana); Saverio Avino (CNR -INO, National Research Council, National Institute of Optics - Italy)

Speaker(s): Ferdinando D'Apice (Parthenope University)

Pedestrian and Bicycle Monitoring in Urban Sidewalks Using Distributed Acoustic Sensing

Poster

Paper ID 8339

Author(s): Vahid Sharif (Universidad Publica de Navarra VAT ESQ3150012G); Haritz Iribas (Public University of Navarre); Daniel Alaez (Public University of Navarre); Iñigo Corera (Menditech S.L.); Mikel Sagues (Public University of Navarre); Alayn Loayssa (Public University of Navarre)

Speaker(s): Vahid Sharif (Universidad Publica de Navarra VAT ESQ3150012G)

Dielectric-Metal-Dielectric Stack as Alternative Metal Electrode for PbS Colloidal Quantum Dot Infrared Photodetectors

Poster

Paper ID 8388

Author(s): Chenfeng Zheng (Zhejiang University); Weinan Yin (Zhejiang University); Yu Yang (Zhejiang University); Xinyi Liu (Zhejiang University); Zesheng Gou (Zhejiang University); Yunlong Li (Zhejiang University)

Speaker(s): Chenfeng Zheng (Zhejiang University)

Wavelength-Dependent Visibility Evaluation of Underwater Fishing Nets Using Narrowband Active Illumination in Turbid Water

Poster

Paper ID 8466

Author(s): Dongmin Seo (Semyung University); Hansang Wi (Semyung University); Sangwoo Oh (Korea Research Institute of Ships and Ocean Engineering); MINHYUK JEONG (SEMYUNG UNIVERSITY)

Speaker(s): MINHYUK JEONG (SEMYUNG UNIVERSITY)

Polymer Optical Fiber Lossy Mode Resonance Sensor for Temperature Monitoring of Lithium-Ion Batteries

Poster

Paper ID 8491

Author(s): Keith Alcock (University of East Anglia); Sonia Melendi Espina (Instituto de Carboquímica (ICB-CSIC)); Miguel Hernaez (Instituto de Carboquímica (ICB CSIC))

Speaker(s): Miguel Hernaez (Instituto de Carboquímica (ICB CSIC))

Tuesday Afternoon Coffee Break

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

B3P-L Wearable Cardio-Respiratory Monitoring

Tue Oct 27, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY)

Diaphragmatic EMG-Based Respiration Monitoring in Preterm Infants: Comparing Surface Electrodes and Adhesive Patch with Graseby Capsule

Poster

Paper ID 8191

Author(s): Giulia Palladino (Eindhoven University of Technology); Tom Stelwagen (Demcon Macawi); Guilherme Candida (Quad Industries); Wim Christiaens (Quad Industries); Heidi van de Mortel (Maxima Medical Centre); John Vissers (Demcon Macawi); Hendrik Niemarkt (Maxima Medical Centre); Carola van Pul (Màxima Medical Center)

Speaker(s): Giulia Palladino (Eindhoven University of Technology)

In-Sensor Processing for Eye Tracking: Analog vs. Digital Neural Network Execution Comparison

Poster

Paper ID 8324

Author(s): Alessia Bini (Polytechnic University of Milan); Michele Ronchi (Polytechnic University of Milan); Giulia Palmieri (DEIB - Politecnico di Milano); Alberto Pettenella (Polytechnic University of Milan); Jacopo Spagnoli (Polytechnic University of Milan); Carlo Fiorini (Polytechnic University of Milan); Luca Merigo (Luxottica); Marco Carminati (Politecnico di Milano)

Speaker(s): Marco Carminati (Politecnico di Milano)

Real-Time Cardiac Rhythm Assessment Using a Wearable Radar-Based System

Poster

Paper ID 8360

Author(s): Stephanie Pella (Monash University); Neil Tom (Monash University); Muhammad Ali (Monash University); Hui-Chen Han (Victoria Heath Hospital); Mark Halaki (University of Sydney); Tuguy Esgin (Curtin University); Martin Ugander (University of Sydney); Mehmet Yuce (Monash University)

Speaker(s): Neil Tom (Monash University)

Gel-Comparable Flexible Silver Dry Electrodes for Wearable Upper-Arm ECG Monitoring

Poster

Paper ID 8415

Author(s): Nadia Muhammad Hussain (University of Galway); Mavis Gezimati (University of Galway); Dheeraj Shakya (University of Galway); Soumyajyoti Maji (University of Galway)

Speaker(s): Nadia Muhammad Hussain (University of Galway)

Deep Learning-Based R-Peak Detection in Wearable ECG Using a Micromachined Polymeric Electrode

Poster

Paper ID 8714

Author(s): Seba Nur Alhasan (Sabanci University); Erchan Aptoula (Sabanci University); Murat Kaya Yapici (SABANCI UNIVERSITY)

Speaker(s): Seba Nur Alhasan (Sabanci University)

Implementation and Validation of a Real-Time Algorithm for Wearable Seismocardiogram Fiducial Point Detection

Poster

Paper ID 9006

Author(s): Farhan Rahman (Georgia Institute of Technology); Maako Fangajei (Georgia Institute of Technology); Afra Nawar (Georgia Institute of Technology); Onur Kilic (Georgia Institute of Technology); Cem Yaldiz (Georgia Institute of Technology); Jin-Oh Hahn (University of Maryland); Omer Inan (Georgia Institute of Technology)

Speaker(s): Farhan Rahman (Georgia Institute of Technology)

Microwave Humidity Sensor for Breath Rate Monitoring Through Exhalation and Inhalation

Poster

Paper ID 8531

Author(s): Amirhossein Karami Horestani (GEMMA/CIMITEC, Universitat Autònoma de Barcelona); Bahareh Moradi (Autonomous University of Barcelona); Ferran Paredes (GEMMA/CIMITEC, Universitat Autònoma de Barcelona); Karl Adolphs-Saura (Universitat Autònoma de Barcelona); Ferran Martin (GEMMA/CIMITEC, Universitat Autònoma de Barcelona)

Speaker(s): Amirhossein Karami Horestani (GEMMA/CIMITEC, Universitat Autònoma de Barcelona)

Garment-Integrated Inductive Textile Coils for Respiration and Back-Posture Monitoring

Poster

Paper ID 8764

Author(s): Yueyang Wang (USTC); Xinxin Chang (University of Science and Technology of China); Peng YuLian (University of Science and Technology of China); Jiayi Zhao (University of Science and Technology of China); Hongbo Wang (University of Science and Technology of China)

Speaker(s): Yueyang Wang (USTC)

Patch-Grid Electrode Based Bio-Impedance Sensor Framework for Self-Aligned Artery Detection and Pulse Wave Recording

Poster

Paper ID 8826

Author(s): Ragaja S R (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Hemamalini V (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Sahmi MJM (University of Peradeniya); Harshitha Kumar (SSN College of Engineering); Raj Kiran V (Indian Institute of Technology Madras); Jayaraj Joseph (Indian Institute of Technology Madras)

Speaker(s): Raj Kiran V (Indian Institute of Technology Madras)

A Fast-Response Graphene-Based Flexible Capacitive Respiration Sensor

Poster

Paper ID 8230

Author(s): Yong-Teng Liu (Institute of Electronics Engineering, National Tsing Hua University); Li Hsuan-An (National Tsing Hua University); Sheng-Hsiang Tseng (Taiwan Semiconductor Research Institute); Chao-Hui Yeh (National Tsing Hua University); Michael Lu (National Tsing Hua University)

Speaker(s): Li Hsuan-An (National Tsing Hua University)

B4L-G Acoustic and Ultrasonic Sensors 2

Tue Oct 27, 16:00 – 17:00 • Goudriaan I and II

Chair(s): Hengky Chandralim (U.S. Air Force Institute of Technology); Peter Steeneken (Delft University of Technology)

A Bioinspired Piezoelectric MEMS Composite Hydrophone Based on ScAlN for Underwater Acoustic Sensing

Paper ID 8256

Author(s): Wenhao Li (Tianjin University); Yunchao Qi (Tianjin University); Lei Yin (Tianjin University); yujie wei (Tianjin University); Weiwei Cui (Tianjin University); Hao Zhang (Tianjin University)

Speaker(s): Wenhao Li (Tianjin University)

Wideband Force Feedback Control for MEMS Microphones

Paper ID 8780

Author(s): Henning Ahrens (Technische Universität München); Björn Eversmann (Infineon Technologies AG); Christian Bretthauer (Infineon Technologies); Richard Gaggl (Infineon Technologies AG); Til Friebe (Technical University of Munich); Ralf Brederlow (Technische Universität München)

Speaker(s): Henning Ahrens (Technische Universität München)

Exceptional Point Enhanced Humidity Sensing in a Pt-Symmetric Surface Acoustic Wave System

Paper ID 8535

Author(s): Mengting Wang (Key Laboratory of MEMS of the Ministry of Education, Southeast University); Ying Li (Southeast University); Jianqiu Huang (Key Laboratory of MEMS of the Ministry of Education, Southeast University); Qing-An Huang (Key Laboratory of MEMS of the Ministry of Education, Southeast University)

Speaker(s): Mengting Wang (Key Laboratory of MEMS of the Ministry of Education, Southeast University)

Large Distance (>1 M) and High SNR Rangefinder Using PZT and AlN PMUTs as Transceiver Combination in Damped Media

Paper ID 9028

Author(s): Kongbrailatpam Sandeep Sharma (Indian Institute of Science, Bangalore); Sahana D (Indian Institute of Science); Kirandas P S (CeNSE, Indian Institute of Science); Antony Jeyaseelan A (CeNSE, Indian Institute of Science); Gayathri Pillai (Indian Institute of Science, Bangalore)

Speaker(s): Gayathri Pillai (Indian Institute of Science, Bangalore)

B4L-H AI Driven Sensor Systems and Computational Imaging

Tue Oct 27, 16:00 – 17:00 • Penn I

Chair(s): Kianoush Rassels (TU Delft)

A 3000-fps High-Sensitivity In-Sensor Processing SPAD Array for Ultra-Low-Light Digit Classification

Paper ID 8238

Author(s): Jiyuan Zheng (Tsinghua University); Yi Luo (Tsinghua University)

Speaker(s): Jiyuan Zheng (Tsinghua University)

Continuous Cuffless Blood Pressure Estimation Using Dual-Site Laser Vibrometry

Paper ID 8348

Author(s): Siyu Fan (Southeast University); Hongjing Wang (Southeast University); Haobo Li (University of Dundee); Guyue Li (School of Cyber Science and Engineering, Southeast University); Gen Chen (Southeast University)

Speaker(s): Haobo Li (University of Dundee)

Acoustic-Visual Dual-Modal Deep Learning Framework for Automated Industrial Anomaly Sound Detection

Paper ID 8784

Author(s): Yen-Ting Wang (Industrial Technology Research Institute); Yi-Lun Chen (Industrial Technology Research Institute); Hui-Chun Tseng (Industrial Technology Research Institute); Hung-Tsai Wu (Industrial Technology Research Institute); Jen-Yuan Chang (National Tsing Hua University)

Speaker(s): Jen-Yuan Chang (National Tsing Hua University)

Efficient Multi-Aperture THz 3D Imaging with QR Selection and Unrolled Networks

Paper ID 8849

Author(s): Abdulraouf Kutaish (Bergische Universität Wuppertal); Miguel Heredia Conde (University of Wuppertal, Germany); Marcel Andree (University of Wuppertal); Ullrich Pfeiffer (University of Wuppertal)

Speaker(s): Abdulraouf Kutaish (Bergische Universität Wuppertal)

B4L-F Emerging Sensor Technologies and Applications 4 (Option B)

Tue Oct 27, 16:00 – 17:00 • Leeuwen I and II

Chair(s): Gilles Callebaut (KU Leuven); Sandrine Bernardini (Aix Marseille universite IM2NP)

Radar-Based Classification of Sit-to-Stand Transition Patterns in Neurological Impairment

Paper ID 9045

Author(s): Mehri Mehri Ziaee Bideskan (University of calgary); Mariana Bento (University of Calgary); Zahra Abbasi (University of Calgary)

Speaker(s): Mehri Mehri Ziaee Bideskan (University of calgary)

Machine Learning-Based EEG Classification for Controlling a Lower-Body Robotic Exoskeleton

Invited Pre-Published Journal Paper

Paper ID 9145

Author(s): Hod Pery (Ariel University); Roi Yozevitch (Ariel University); Eldad Holdengreber (Ariel University)

Speaker(s): Eldad Holdengreber (Ariel University)

Raycasting-Based Stereo-to-CAD Registration for Industrial Inspection

Paper ID 9153

Author(s): Adrian Kaune (Institute of Measurement and Automatic Control, Leibniz University Hannover); Lennart Hinz (Leibniz University Hannover); Eduard Reithmeier (Institute for Measurement and Automatic Control, Leibniz Universität Hannover, Hannover, Germany)

Speaker(s): Adrian Kaune (Institute of Measurement and Automatic Control, Leibniz University Hannover)

Background-Calibrated Wi-Fi Sensing for Semantic Space-State Separation

Paper ID 9159

Author(s): Shunsuke Uehashi (Information Technology R&D Center, Mitsubishi Electric Corpo...); Ayaka Sata (Mitsubishi Electric Corporation); Shigenori Tani (Mitsubishi Electric Corporation)

Speaker(s): Shunsuke Uehashi (Information Technology R&D Center, Mitsubishi Electric Corpo...)

B4L-I Novel Sensors Systems for Sustainable Agri-Food and Environmental Applications - Food

Tue Oct 27, 16:00 – 17:00 • Penn II

Chair(s): Pascal Mailley (CEA-Leti); Pierre Lovera (Tyndall National Institute)

Pocket-Sized Near-Infrared Spectroscopy for Olive Leaf Water Content Assessment

Paper ID 8201

Author(s): Leonardo Ciaccheri (CNR-IFAC); Lien Smeesters (B-PHOT Brussels Photonics - Vrije Universiteit Brussel); Indy Magnus (B-PHOT Brussels Photonics - Vrije Universiteit Brussel); Raffaella Petruccelli (National Research Council of Italy); Andrea Azelio Mencaglia (CNR-Istituto di Fisica Applicata "Nello Carrara"); Clemente Pellegrini Strozzi (Società Agricola Indaco Srl); Anna G. Mignani (CNR-Istituto di Fisica Applicata Nello Carrara Italy)

Speaker(s): Leonardo Ciaccheri (CNR-IFAC)

Novel Prototype for Sulfite Sensing in Wine with Open-Circuit Potential Baseline Correction

Paper ID 8318

Author(s): Guilherme Costa (Watgrid,SA); Daniel Duarte (Watgrid,SA); Lúcia Bilro (Watgrid,SA); Rogério Nogueira (Instituto-de-Telecomunicacoes)

Speaker(s): Guilherme Costa (Watgrid,SA)

Development of a Point-of-Care Optical Biochemical Sensing System for Sucrose Quantification in Sugarcane Juice

Paper ID 8573

Author(s): Shiva Karthik Ekambaram (Plaksha University); Arvind Kumar (Plaksha University); Amruta Behera (Plaksha University)

Speaker(s): Shiva Karthik Ekambaram (Plaksha University)

Long-Term Reliability Assessment and Calibration of Eco-Friendly Paper-Based Humidity Sensors

Paper ID 8593

Author(s): Sarah Bornemann (Universität Bremen); Shadi Attarha (University of Bremen); Anna Förster (Sustainable Communication Networks, University of Bremen, Ge...); Björn Lüssem (University of Bremen)

Speaker(s): Sarah Bornemann (Universität Bremen)

B4L-C Optical Sensors 4

Tue Oct 27, 16:00 – 17:00 • Diamond II

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas); Flavio Esposito (University of Naples Parthenope)

Single Zone Time-of-Flight Sensor with 8M Ranging and Low Power Consumption for IoT & Industry 4.0

Paper ID 8736

Author(s): Axel Crocherie (STMicroelectronics); Abhishek Singh (STMicroelectronics); Donald Baxter (STMicroelectronics); Andrew Walker (STMicroelectronics); Andreas Assmann (STMicroelectronics); Maher McDonald (STMicroelectronics); Graeme Storm (STMicroelectronics); Ken Cormack (STMicroelectronics); Sara Pellegrini (STMicroelectronics); Neale Dutton (STMicroelectronics); Fabrice Martin (STMicroelectronics); Elise Le Roux (STMicroelectronics); Etienne Bossard (STMicroelectronics); Celine Neukomm (STMicroelectronics); Pascal Mellot (STMicroelectronics); Wei Jian Zhao (STMicroelectronics); Qiao Yue (STMicroelectronics); Jelah Nieva Caceres (STMicroelectronics); Choon Pheng Tan (STMicroelectronics)

Speaker(s): Axel Crocherie (STMicroelectronics)

A 0.8-V 135-fps 8T2C PWM Frame-Difference Vision Sensor with Ramp-Domain Background Calibration for Multimode Vision Sensing

Paper ID 8161

Author(s): Yu-Hsiang Wang (National Tsing Hua University); YuanChe Hsu (National Tsing Hua University); John Carl Joel Marquez (National Tsing Hua University); Chih-Cheng Hsieh (National Tsing Hua University)

Speaker(s): YuanChe Hsu (National Tsing Hua University)

A Binary Phase Measurement Pixel with an Integrated Lightweight $\Sigma\Delta$ -Converter

Paper ID 8502

Author(s): Phil David Boerner (University of Siegen/Fak. IV/ACIS); Miguel Heredia Conde (University of Wuppertal, Germany); Bhaskar Choubey (Universität Siegen)

Speaker(s): Phil David Boerner (University of Siegen/Fak. IV/ACIS)

Compact FPGA-Based High-SNR DAS System with Synchronous Clock Architecture

Paper ID 8840

Author(s): Jiahao Tian (Tsinghua University); Fan Zhou (HYQ Co., Ltd.); Dapeng Zhang (HYQ Co., Ltd.); Zhichao Mao (HYQ Co., Ltd.); Lin Yao (HYQ Co., Ltd.); Binxiang Qi (Tsinghua University)

Speaker(s): Jiahao Tian (Tsinghua University)

B4L-D Physical Sensors 3

Tue Oct 27, 16:00 – 17:00 • Mees I

Chair(s): Filipe Arroyo Cardoso (TU, Delft); Michael Sherburne (Johns Hopkins Applied Physics Laboratory)

Monitoring the Oscillation of a Magnetizable Artificial Cilium

Paper ID 8506

Author(s): Jonas Astl (Johannes Kepler University Linz); Wolfgang Hilber (Johannes Kepler University Linz); Bernhard Jakoby (Johannes Kepler University Linz)

Speaker(s): Jonas Astl (Johannes Kepler University Linz)

Low-Cost Permanent Magnet Based on a Concentric Double Two-Stacked MANDHALA Rings Structure for Portable NMR Spectrometer

Paper ID 8545

Author(s): Edouard Meunier (Icube, Strasbourg University); Luc Hébrard (ICube Laboratory, University of Strasbourg); Philippe Bertani (University de Strasbourg); Baudouin Dillmann (ILabAfrica, Strathmore University); Morgan Madec (University of Strasbourg); Thomas Quirin (University of Applied Sciences and Arts Northwestern Switzer...); Joris Pascal (University of Applied Sciences and Arts Northwestern Switzer...)

Speaker(s): Edouard Meunier (Icube, Strasbourg University)

A Disk-Shaped Magnetoelastic Torque Sensor for Robotic Joints Using Permanent Magnetization

Paper ID 8664

Author(s): Bruno Brajon (Melexis Technologies SA); Enrico Gasparin (Melexis Technologies SA); Nicole Yazigy (Melexis Technologies SA); Lisa Salamin (CSEM SA); Florian Copt (CSEM SA); Guzman Borque Gallego (CSEM SA); Elias Klauser (CSEM SA); Gaël Close (Melexis Technologies SA)

Speaker(s): Bruno Brajon (Melexis Technologies SA)

Enhanced-Resolution Readout Electronics for Fss-Based Microwave Ice Detection

Paper ID 8724

Author(s): Aiden Macson (University of British Columbia); Fatemeh Niknahad (University of British Columbia); Mohammad Zarifi (University of British Columbia)

Speaker(s): Mohammad Zarifi (University of British Columbia)

B4L-E Radar and Perception Systems

Tue Oct 27, 16:00 – 17:00 • Mees II

Chair(s): Geethu Joseph (Delft-University-of-Technology); Marzieh Amini (Carleton University)

Evaluation of Radar-Inertial 3D Slam in Planar and Highly Uneven Outdoor Environments

Paper ID 8592

Author(s): Ruslan Sultan (University of Applied Sciences Osnabrück); Steffen Greiser (University of Applied Sciences Osnabrück); Justus Leskow (University of Applied Science Osnabrück)

Speaker(s): Ruslan Sultan (University of Applied Sciences Osnabrück)

Radar-Based Sparsity-Aware Dynamic Occupancy Grid Mapping

Paper ID 8865

Author(s): Peiyuan Zhai (Delft University of Technology); Mingdong Dai (Delft University of Technology); Geethu Joseph (Delft-University-of-Technology); Nitin Jonathan Myers (Delft University of Technology); Ashish Pandharipande (NXP Semiconductors)

Speaker(s): Peiyuan Zhai (Delft University of Technology)

Gradual Blockage Detection in Automotive Radars

Paper ID 8808

Author(s): Hanqing Wu (NXP Semiconductors); Ashish Pandharipande (NXP Semiconductors)

Temporal Depth-Stream Interfaces for Embedded Quadrotor Avoidance

Paper ID 8203

Author(s): Junyu Wei (NationalUniversityOfDefenseTechnology); Haowen Wang (National University of Defense Technology); Shaojing Su (National University of Defense Technology); Shiqi Li (National University of Defense Technology); Zongqing Zhao (National University of Defense Technology); Yanan Ma (Academy of Military Sciences)

Speaker(s): Junyu Wei (NationalUniversityOfDefenseTechnology)

B4L-B Sensor Fusion and Navigation

Tue Oct 27, 16:00 – 17:00 • Diamond I

Chair(s): André Eugenio Lazzaretti (Federal University of Technology-Paraná); Christina Schober (Honeywell/Quest)

Source-Compatible Learned Inertial Odometry for Neural Indoor Localization

Paper ID 9023

Author(s): ANH VAN VU (KAIST); Dongsoo Han (KAIST)

Speaker(s): ANH VAN VU (KAIST)

Learning Trailer Mass from Launch Dynamics and Vibration Signatures Using Inertial Measurement Data

Paper ID 8481

Author(s): Justus Leskow (University of Applied Science Osnabrück); Steffen Greiser (University of Applied Sciences Osnabrück); Ruslan Sultan (University of Applied Sciences Osnabrück)

Speaker(s): Justus Leskow (University of Applied Science Osnabrück)

Data-Driven Localization of Magneto-Mechanical Resonators from Time Signals

Paper ID 8471

Author(s): Artyom Tsanda (Hamburg University of Technology); Konrad Scheffler (Hamburg University of Technology, University Medical Center Hamburg-Eppendorf); Sarah Reiss (Hamburg University of Technology); Jonas Faltinath (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Janik Bach (Hamburg University of Technology); Florian Thieben (Hamburg University of Technology); Pascal Stagge (Fraunhofer Research Institution for Individualized Medical Technology and Engineering IMTE); Fabian Mohn (Technische Universität Hamburg); Tobias Knopp (Hamburg University of Technology / University Medical Center Hamburg-Eppendorf)

Speaker(s): Artyom Tsanda (Hamburg University of Technology)

Performance Evaluation of Commercial BLE AoA Hardware in Indoor Environments

Paper ID 8775

Author(s): Sara Martin Frechina (Universitat de València); Esther Martinez (University of Valencia); Joaquín Torres-Sospedra (Departament d'Informàtica, Universitat de València, Spain VA...)

Speaker(s): Sara Martin Frechina (Universitat de València)

Industry Career Fair/MYOSA Competition

Tue Oct 27, 17:00 – 18:30 • Shipping, Exchange & Mercurius Hall

Gala Dinner

Tue Oct 27, 18:30 – 21:30 • Laurenskerk

Plenary Speaker

Wed Oct 28, 8:30 – 10:00 · Rotterdam Hall 1 & 2
Chair(s): Patrick French (TU Delft)

Sensing at the Interface: Where Sensing Meets the Body

Plenary

Speaker(s): Ellis Meng (University of Southern California)

Wednesday Morning Coffee Break

Wed Oct 28, 10:00 – 10:30 · Shipping, Exchange & Mercurius Hall

C1P-K Data Processing and AI for Sensor Applications 2

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall
Chair(s): Eduardo Dos Santos (Universidade Tecnológica Federal do Paraná)

Choosing Loss Functions for Multiphase Mass Flow Estimation

Poster

Paper ID 8056

Author(s): Amanda Nyholm (Norwegian University of Science and Technology); Yessica Arellano (SINTEF Energy Research); Jinyu Liu (KROHNE-Ltd); Damian Krakowiak (KROHNE Ltd.); Pierluigi Salvo Rossi (Norwegian University of Science and Technology)

Speaker(s): Pierluigi Salvo Rossi (Norwegian University of Science and Technology)

A VAE-Based Framework for Label-Free Analysis of Fatigue Progression in Running Biomechanics Using a Single Wearable IMU

Poster

Paper ID 8145

Author(s): Xiaowen Song (University of Twente); Jasper Reenalda (University of Twente); Frank Wouda (University of Twente)

Speaker(s): Xiaowen Song (University of Twente)

GC-LOF: Adaptive Slip Control for Motorcycle Stability in Cornering

Poster

Paper ID 8281

Author(s): Luís Ferreira (University of Trás-os-Montes and Alto Douro); Paulo Salgado (University of Trás-os-Montes and Alto Douro); José Boaventura (University of Trás-os-Montes and Alto Douro); Antonio Luis Valente (Universidade de Trás-os-Montes e Alto Douro (UTAD))

Speaker(s): Luís Ferreira (University of Trás-os-Montes and Alto Douro)

Data-Driven or Model-Constrained? Comparing Airflow Estimation Methods Under Sparse Sensing

Poster

Paper ID 8283

Author(s): Dominik Aigner (Technical University of Munich); Thomas Wiedemann (German Aerospace Center); Javier Monroy (University of Málaga); Achim J. Lilienthal (Technische Universität München)

Speaker(s): Dominik Aigner (Technical University of Munich)

Physical Reservoir Computing on MEMS: Effects of Noise, Feedthrough and Temperature Coefficient of Frequency on the System Performance

Poster

Paper ID 8296

Author(s): Andrea Galli (Politecnico di Milano); Giacomo Mondello Malvestiti (Polytechnic University of Milan); Giacomo Langfelder (Politecnico di Milano); Alberto Corigliano (Politecnico di Milano); Paolo Frigerio (Politecnico di Milano)

Speaker(s): Andrea Galli (Politecnico di Milano)

RPNNet: A Learnable Multi-Threshold Recurrence Plot Framework for OSA Event Detection Using Nasal Pressure Signals

Poster

Paper ID 8330

Author(s): Laksika Damdaeng (Vidyasirimedhi Institute of Science and Technology); Nattapong Jaimcharyatam (Chulalongkorn University); Busarakum Chaitusaney (Chulalongkorn University); Apiwat Dittapron (Rajamangala University of Technology Krungthep); Theerawit Wilaiprasitporn (Vidyasirimedhi Institute of Science and Technology, Sense AI...)

Speaker(s): Laksika Damdaeng (Vidyasirimedhi Institute of Science and Technology)

Simulating MRI Metal Artifacts from Scout Scans Using YOLOv8n and Pix2Pix Models

Poster

Paper ID 8476

Author(s): Aline Rossi (Universidade Tecnológica Federal do Paraná); André Eugenio Lazzaretti (Federal University of Technology-Paraná); Fabio Kurt Schneider (Federal University of Technology - Paraná); José Jair Alves Mendes Júnior (Federal University of Technology-Paraná)

Speaker(s): Aline Rossi (Universidade Tecnológica Federal do Paraná)

MEMS Reservoir Computing in AlN Based Differential Resonant Accelerometer

Poster

Paper ID 8515

Author(s): Hsiang-Chun Hsiao (National Yang Ming Chiao Tung University); Cheng-Yu Lo (National Yang Ming Chiao Tung University); Yu-Chi Chuang (National Yang Ming Chiao Tung University); Yi Chiu (National Yang Ming Chiao Tung University)

Speaker(s): Yu-Chi Chuang (National Yang Ming Chiao Tung University)

Learning to Autofocus a Surface Plasmon Resonance (SPR) Microscopy Sensor Based on Pairwise Comparisons with a Siamese Network

Poster

Paper ID 8583

Author(s): Konstantin Wüstefeld (TU Dortmund University); Frank Weichert (Technical University of Dortmund)

Speaker(s): Konstantin Wüstefeld (TU Dortmund University)

Maxwell-Consistent 3-D Magnetic Field Camera Using Scalar-Potential-Based Reconstruction

Poster

Paper ID 8638

Author(s): Paul Jürß (University Medical Center Hamburg-Eppendorf; Hamburg University of Technology); Marija Boberg (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Philip Suskin (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Tobias Knopp (Hamburg University of Technology / University Medical Center Hamburg-Eppendorf); Fynn Foerger (University Medical Center Hamburg-Eppendorf)

Speaker(s): Paul Jürß (University Medical Center Hamburg-Eppendorf; Hamburg University of Technology)

Development of a Flexible Pressure Sensing System for Real-Time Sitting Posture Recognition

Poster

Paper ID 8674

Author(s): Brahad Kokad (International Institute of Information Technology Hyderabad); Aftab Hussain (International Institute of Information Technology Hyderabad); Anis Fatema (VIT Vellore)

Speaker(s): Anis Fatema (VIT Vellore)

RA²-DINS: Risk-Aware Adaptive Sliding-Window Factor Graph Optimization for DVL/INS Fusion in Aquatic Navigation

Poster

Paper ID 8852

Author(s): Jianan Lou (Tsinghua University); Shuke Wang (Tsinghua University); Shaolin Lü (Tsinghua University); Xueling Zhao (Tsinghua University); Rong Zhang (Tsinghua University)

Speaker(s): Jianan Lou (Tsinghua University)

An Embedded TinyML Node for NO₂ Prediction from Satellite and In-Situ Data

Poster

Paper ID 8884

Author(s): Julio Cesar Tello-Rojas (National University of San Marcos); Jeremy Hanks Reyes-Huaman (National University of San Marcos)

Speaker(s): Julio Cesar Tello-Rojas (National University of San Marcos)

Physics-Guided EIT Reconstruction for Sparse Tactile Sensing

Poster

Paper ID 8977

Author(s): Cui Can (中山大学); Zhuoshuo Li (Sun Yat-sen University); Changhong Wang (Sun Yat-sen University); Liu Mengting (Sun-Yat-Sen-University)

Speaker(s): Cui Can (中山大学)

MS-CLNet: A Multi-Stage Convolutional-LSTM Fusion Network for Sensor-Based HAR

Poster

Paper ID 8394

Author(s): Zhouyang Wang (Southeast University); Lingfei Mo (Southeast University)

Speaker(s): Zhouyang Wang (Southeast University)

C1P-Q Demo Session 2

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Paul Vulto (MIMETAS); Calogero Maria Oddo (Sant'Anna School of Advanced Studies)

Live Demonstration: Electronic Nose for Perfume Discrimination and Counterfeit Detection

Paper ID 8428

Author(s): Emilie Duval (SenseBioTek); Yanis Amara (SenseBioTek); Leshan Usgodaarachchi (SenseBioTek); Lambert Trenoras (SenseBioTek); Nabil Moumane (SenseBioTek); Benoît Piro (ITODYS Laboratory - Paris Cité University); Bérengère Lebental (Gustave Eiffel University); Nathalie Gagey-Eilstein (SenseBioTek)

Live Demonstration: Autonomous Sensor Operating Under Low Levels of Indoor Artificial Lighting

Paper ID 8458

Author(s): Ricardo Alan Retana González (Universitat Politècnica de Catalunya); Ferran Reverter (Universitat-Politecnica-de-Catalunya); Manel Gasulla (Universitat Politècnica de Catalunya)

Speaker(s): Ricardo Alan Retana González (Universitat Politècnica de Catalunya)

Live Demonstration: Advanced Sensor Systems for Smart Agriculture

Paper ID 8492

Author(s): han shao (Tyndall National Institute); Alan O Riordan (Tyndall National Institute); Richard Murray (Tyndall National Institute); Sana Muzaffar (Tyndall National Institute); AMRUTHA LAHARI SREERAMA (Tyndall National Institute)

Speaker(s): AMRUTHA LAHARI SREERAMA (Tyndall National Institute)

Live Demonstration: Towards Energy Neutral IoT Sensors Using a COTS MCU-Based Backscatter Tag with Multi-Load Front-End

Paper ID 8581

Author(s): Tijl Schepens (Katholieke Universiteit Leuven); Jarne Van Mulders (Katholieke Universiteit Leuven); Liesbet Van der Perre (KU Leuven); Gilles Callebaut (KU Leuven)

Speaker(s): Gilles Callebaut (KU Leuven)

Live Demonstration: Real-Time GaN Transistor RUL Prediction on Edge Devices

Paper ID 8639

Author(s): Sinian Li (Delft University of Technology); Jiaqi Liu (Signal Processing Systems, Delft University of Technology); Raj Thilak Rajan (Delft university of Technology); Andrea Natale Tallarico (ARCES, University of Bologna); Justin Dauwels (Delft University of Technology)

Speaker(s): Sinian Li (Delft University of Technology)

Live Demonstration: Drone Area Network for Collecting Data from Low-Power Sensor Nodes

Paper ID 8759

Author(s): Jona Cappelle (KU Leuven); Bert Pyck (Katholieke Universiteit Leuven); Lieven De Strycker (Katholieke Universiteit Leuven); Liesbet Van der Perre (KU Leuven)

Speaker(s): Jona Cappelle (KU Leuven)

Live Demonstration: A Battery-Free Light-Powered Semi-Passive Tag

Paper ID 8765

Author(s): Amir Fereshtian (Universitat-Politecnica-de-Catalunya); Ricardo Alan Retana González (Universitat Politècnica de Catalunya); Jordi Berenguer (Universitat-Politecnica-de-Catalunya); Ferran Reverter (Universitat-Politecnica-de-Catalunya); Manel Gasulla (Universitat Politècnica de Catalunya)

Speaker(s): Amir Fereshtian (Universitat-Politecnica-de-Catalunya)

Live Demonstration: Edge AI System for Real-Time Smartphone Charging Anomaly Detection

Paper ID 8110

Author(s): Khaja Pasha Shaik (MLR Engineering College); You-Jian Ma (National University of Tainan); Jen-Jee Chen (National Yang Ming Chiao Tung University)

Speaker(s): You-Jian Ma (National University of Tainan)

Live Demonstration: In Situ Active Marker Generation for Markerless Tracking on Featureless Surfaces Using Persistent Luminescence

Paper ID 8964

Author(s): Tomohiko Hayakawa (Tokyo University of Science); Yushi Moko (Tokyo University of Science); Yuka Hiruma (Tokyo University of Science); Ayako Mino (Tokyo University of Science); Masatoshi Ishikawa (Tokyo University of Science)

Speaker(s): Tomohiko Hayakawa (Tokyo University of Science)

C1P-J Emerging Sensor Technologies and Applications 3

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Gayathri Pillai (Indian Institute of Science, Bangalore)

An Aptasensor for Ultrasensitive Detection of Lipopolysaccharide Based on Nonlinear Parity-Time Symmetry

Poster

Paper ID 8025

Author(s): Xifan Gao (Southeast University); Mingtao Xu (Southeast University); Haochen Qi (Chinese Academy of Sciences); Lei Dong (Southeast University)

Speaker(s): Xifan Gao (Southeast University)

Passive Phase-Based RF Sensing for Ingestible Capsule Localization via Antenna Detuning

Poster

Paper ID 8101

Author(s): Anna Kaliuzhna (IETR CNRS, University of Rennes); Erdem Cil (IETR CNRS, University of Rennes); Patricio Jaque (Pontifical Catholic University of Valparaíso); Denys Nikolayev (IETR UMR CNRS 6164)

Speaker(s): Anna Kaliuzhna (IETR CNRS, University of Rennes)

Simulation-Driven Analysis of Capacitive Eyewear for Facial Expression Recognition

Poster

Paper ID 8139

Author(s): Athul Krishnan (Politecnico di Milano); Francesco Latino (Polytechnic University of Milan); Andrea Farabbi (Politecnico di Milano); Matteo Costi (Polytechnic University of Milan); Matteo Rossi (EssilorLuxottica SA); Niccolò Antonello (Essilorluxottica); Luca Mainardi (Politecnico di Milano); Pietro Cerveri (Polytechnic University of Milan)

Speaker(s): Athul Krishnan (Politecnico di Milano)

Enhanced Resistive Sensing Based on Nonlinear Parity-Time Symmetric LC Resonators

Poster

Paper ID 8228

Author(s): Dongyan Chen (Key Laboratory of MEMS of the Ministry of Education, Southea...); Shimiao Su (Southeast University); Lei Dong (Southeast University); Qing-An Huang (Key Laboratory of MEMS of the Ministry of Education, Southea...)

Speaker(s): Dongyan Chen (Key Laboratory of MEMS of the Ministry of Education, Southea...)

CRADLE: A Carton-Based Non-Contact System for Measuring Bedding Firmness in Infant Home Sleep Environments

Poster

Paper ID 8244

Author(s): Satoshi Inagaki (Institute of Science Tokyo); Naoki Sano (Institute of Science Tokyo); Mikiko Oono (National Institute of Advanced Industrial Science and Technology); Yuki Hashimoto (Tokyo Institute of Technology); Tatsuhiro Yamanaka (Safe Kids Japan); Yoshifumi Nishida (Insititute of Tokyo Science (Tokyo Institute of Technology))

Speaker(s): Satoshi Inagaki (Institute of Science Tokyo)

The Tilting Mode: A New Degree of Freedom for Magneto-Mechanical Resonator Sensors

Poster

Paper ID 8302

Author(s): Nora Timm (Fraunhofer IMTE); Florian Hartwig (Fraunhofer Research Institution for Individualized Medical Technology and Engineering IMTE); Jonas Faltinath (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Sarah Reiss (Hamburg University of Technology); Pascal Stagge (Fraunhofer Research Institution for Individualized Medical Technology and Engineering IMTE); Tobias Knopp (Fraunhofer IMTE, Hamburg University of Technology, University Medical Center Hamburg-Eppendorf)

Speaker(s): Nora Timm (Fraunhofer IMTE)

Magnetic Nanoparticle Quantification Using a Delta-E Magnetoelectric Sensor

Poster

Paper ID 8311

Author(s): Lucie Bangert (Kiel University); Patrick Wiegand (Kiel University); Alexander Teplyuk (Kiel University); Giuseppe Barbieri (Kiel University); Vidhi Mayatra (Kiel University); Frank Wiekhorst (Physikalisch-Technische Bundesanstalt); Robert Rieger (Kiel University); Michael Höft (Kiel-University); Martina Gerken (Kiel University)

Speaker(s): Lucie Bangert (Kiel University)

Toward Dual-Axis Inertial Measurement with 3D Cooling Atom-Beam Interferometry

Poster

Paper ID 8382

Author(s): Yingpeng Zhao (Tsinghua University); Shengzhe Wang (Tsinghua University); Ke Shen (Tsinghua University); Weichen Jia (Tsinghua University); Yue Xin (Tsinghua University); Qianlan Cai (Tsinghua University); Yanying Feng (Tsinghua University)

Speaker(s): Yingpeng Zhao (Tsinghua University)

Novel At-Edge Effective Motion Artifact Mitigation and for Blood Pressure Prediction via 2D Time-Frequency PPG Signals

Poster

Paper ID 8386

Author(s): Duc Thang Ngo (National Yang Ming Chiao Tung University); Cha-Chi Chung (National Yang Ming Chiao Tung University); Paul C.-P. Chao (National Yang Ming Chiao Tung University); Sheng-Chieh Huang (National Yang Ming Chiao Tung University)

Speaker(s): Duc Thang Ngo (National Yang Ming Chiao Tung University)

Learning Materials Before Contact: Physics-Guided Ect-Multizone Tof Fusion for Humanoid E-Skins

Poster

Paper ID 8633

Author(s): Zheng Xu (Shanghai Jiao Tong University); Qianyu Chen (Shanghai Jiao Tong University); Zecai Lin (Shanghai Jiao Tong University); Jiafan Chen (Shanghai Jiao Tong University); Zhu Jin (Shanghai TARS Robotics Co., Ltd.); Tongqing Chen (Shanghai TARS Robotics Co., Ltd.); Anzhu Gao (Shanghai Jiao Tong University)

Speaker(s): Zheng Xu (Shanghai Jiao Tong University)

Integrated Fiber Bragg Grating and Ultrasound Sensing for Enhanced Finger Tapping Analysis

Poster

Paper ID 8853

Author(s): Elena De Vita (University of Naples 'Parthenope'); Stefano Franceschini (University of Naples Parthenope); Simona Antonucci (University of Naples Parthenope); Agostino Iadicco (University of Naples Parthenope); Fabio Baselice (University of Naples Parthenope); Stefania Campopiano (Università degli studi di Napoli "PARTHENOPE")

Speaker(s): Stefania Campopiano (Università degli studi di Napoli "PARTHENOPE")

Flexible EIT-Based Tactile Sensor for In-Hand Contact Distribution Mapping

Poster

Paper ID 8924

Author(s): Anna Dabrowska (University of Edinburgh); Huazhi Dong (The University of Edinburgh); Francesco Giorgio-Serchi (The-University-of-Edinburgh); Yunjie Yang (The University of Edinburgh)

Speaker(s): Anna Dabrowska (University of Edinburgh)

Ambulatory Measurement of Arterial Stiffness Using Film-Sensors Integrated Arm Cuff Device

Poster

Paper ID 8978

Author(s): Karthikeyan Natarajan (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Sujay Shanthakumar (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Harshitha Kumar (SSN College of Engineering); Nabeel PM (Indian Institute of Technology Madras); Raj Kiran V (Indian Institute of Technology Madras); Jayaraj Joseph (Indian Institute of Technology Madras)

Speaker(s): Jayaraj Joseph (Indian Institute of Technology Madras)

Ultra-High-Resolution Copper-Coated Lig Sensors via Electroless Deposition on UV-Scribed Kapton

Poster

Paper ID 9032

Author(s): Abdullah Al Miraj (Ohio University); Grace Sunday (Ohio University); Sumaiya Abul Kalam (Ohio University); Savas Kaya (Ohio University)

Speaker(s): Savas Kaya (Ohio University)

C1P-L Microneedle-Based Transdermal Monitoring

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY)

Graphene/Carbon-Based Microneedle Aptasensor for In Vitro Progesterone Quantification Toward ISF-Based Pregnancy Monitoring

Poster

Paper ID 8605

Author(s): Hadi Mirzajani (EPFL); Sandro Carrara (EPFL)

Speaker(s): Hadi Mirzajani (EPFL)

A Facile and Mechanochemical Bistability Hydrogel Microneedle for Transdermal Insulin Delivery and Sensing Integration

Poster

Paper ID 8686

Author(s): Rui Chen; Songxue Chen (Tianjin University); Khaja Pasha Shaik (MLR Engineering College); Dachao Li (State Key Laboratory of Precision Measurement Technology and...); Xiaoping Li (Tianjin University)

Speaker(s): Rui Chen

C1P-P Optical Sensors 8 (Option B)

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Avishek Adhikary (Indian Institute of Technology Bhilai)

An EVS-Based Stand-Alone Water Flow Sensor with Accumulation-Time Feedback Control

Poster

Paper ID 8620

Author(s): Takuma Shibahara (Keio University); Takuto Kishimoto (Keio University); Toshihiro Shiratori (Keio University); Kyota Shimada (School of Integrated Design Engineering, Graduate School of ...); Ryusei Ando (School of Integrated Design Engineering, Graduate School of ...); Hidetoshi Takahashi (Keio University)

Speaker(s): Takuma Shibahara (Keio University)

Camera Sensor Qualification for Multi-View Vehicle Detection

Poster

Paper ID 8731

Author(s): Vincent Lassen (FAU Erlangen/Nürnberg); Maximilian Lübke (Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)); Eva Russwurm (Friedrich-Alexander-Universität Erlangen-Nürnberg); Norman Franchi (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Speaker(s): Vincent Lassen (FAU Erlangen/Nürnberg)

Machine Learning-Based Virtual Luxmeters for Fault Compensation and Angular Sensing Expansion in Robotic Lighting Inspection

Poster

Paper ID 9053

Author(s): João Henrique Campos Soares (UTFPR); José Mario Nishihara de Albuquerque (UTFPR); Giovanni Braglia (IIT); André Eugenio Lazzaretti (Federal University of Technology-Paraná); André Schneider de Oliveira (UTFPR); Ronnier Frates Rohrich (Federal University of Technology – Paraná (UTFPR))

Speaker(s): José Mario Nishihara de Albuquerque (UTFPR)

Demonstration of a Fully Vertical hole-Injected 4H-SiC-SACM-Avalanche-Photodiode with Two Serial pn-Junctions

Poster

Paper ID 9141

Author(s): Felix Beier (Fraunhofer IISB); Niklas Papathanasiou (sglux GmbH); Birgit Kallinger (Fraunhofer IISB); Mathias Rommel (Fraunhofer Institute for Integrated Systems and Device Techn...); Jörg Schulze (Friedrich-Alexander University of Erlangen-Nuremberg / Frau...)

Speaker(s): Felix Beier (Fraunhofer IISB)

External Photoreflective Tactile Sensing Based on Surface Deformation Measurement

Invited Pre-Published Journal Paper Poster

Paper ID 9155

Author(s): Seiichi Yamamoto (National Institute of Advanced Industrial Science and Technology); Hiroyuki Ishizuka (Osaka University); Takumi Kawasetsu (Department of Mechanical Engineering and Science, Kyoto University); Koh Hosoda (Department of Mechanical Engineering and Science, Kyoto University); Takayuki Kameoka (Faculty of Design Department of Media Design, Kyushu University); Kango Yanagida (Graduate School of Engineering Science, The University of Osaka); Takato Horii (Graduate School of Engineering Science, The University of Osaka); Yusuke Sakaue (Graduate School of Engineering Science, The University of Osaka); Sei Ikeda (Graduate School of Engineering Science, The University of Osaka); Osamu Oshiro (Graduate School of Engineering Science, The University of Osaka)

Speaker(s): Seiichi Yamamoto (National Institute of Advanced Industrial Science and Technology)

C1P-M Physical Sensors 5

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Patrick French (TU Delft)

Practical Considerations for Transient FEM Simulation of Micro-Fluxgate Sensors

Poster

Paper ID 8231

Author(s): Jiri Maier (Faculty of Electrical Engineering, Czech Technical Universit...); Pavel Ripka (Czech Technical University in Prague); Mehran Mirzaei (Faculty of Electrical Engineering, Czech Technical Universit...); Poki Chen (National Taiwan University of Science and Technology)

Speaker(s): Pavel Ripka (Czech Technical University in Prague)

An FPGA-Based Real-Time Wideband Impedance Measurement Platform for Online Sensing

Poster

Paper ID 8398

Author(s): Yongyao Niu (Chinese Academy of Sciences); Jiahe Zheng (Chinese Academy of Sciences); Gongwei Zhang (Chinese Academy of Sciences); Ding Han (Chinese Academy of Sciences); Lihong Pan (Chinese Academy of Sciences); Jian Chen (Aerospace Information Research Institute, Chinese Academy of...); Deyong Chen (Aerospace Information Research Institute, Chinese Academy of...); Jiaxin Qin (Chinese Academy of Sciences); Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...); Xiaoye Huo (Aerospace Information Research Institute, Chinese Academy of...)

Speaker(s): Deyong Chen (Aerospace Information Research Institute, Chinese Academy of...)

Laser-Induced Thermoelastic Excitation of a Quartz Tuning Fork for Vacuum Pressure Sensing

Poster

Paper ID 8426

Author(s): yujie wei (Tianjin University); Yawen Zheng (Tianjin University); Boyi Wang (Tianjin University); Hao Zhang (Tianjin University); Weiwei Cui (Tianjin University)

Speaker(s): yujie wei (Tianjin University)

An 8-State Offset-Cancellation Scheme Achieving 509 μ T Residual Magnetic Offset in Graphene Hall Sensor

Poster

Paper ID 8479

Author(s): Koteswar Doddi (Indian Institute of Science, Bangalore); Mayank Shrivastava (Indian Institute of Science); Arup Polley (Indian Institute of Science)

Speaker(s): Koteswar Doddi (Indian Institute of Science, Bangalore)

Integrated Additively Manufactured Sensors in Multi-Stable Compliant Mechanisms

Poster

Paper ID 8482

Author(s): Marijn Goutier (Technische Universität Braunschweig); Thomas Vietor (Technische Universität Braunschweig)

Speaker(s): Marijn Goutier (Technische Universität Braunschweig)

A Via-Induced Microwave Probe for Subsurface Soil Moisture Sensing and Communication

Poster

Paper ID 8527

Author(s): Vijaykumaran Alagarsamy (University of Twente); André Kokkeler (University of Twente); Sujith Raman (University of Twente)

Speaker(s): Vijaykumaran Alagarsamy (University of Twente)

Fabrication of a Four-Terminal Impedance Measurement Sensor with a Chopper Amplifier for Soil Water Content Monitoring

Poster

Paper ID 8604

Author(s): Yota Miyata (Shizuoka University); Shintaro Kobayashi (Shizuoka University); Kota Yokoyama (Shizuoka University); Ryuya Kuramoto (Shizuoka University); Katsuyuki Takagi (Shizuoka University); Satoshi Ota (Shizuoka University); Isamu Zakoji (Johtsu Service, Inc); Masato Futagawa (Shizuoka University)

Speaker(s): Yota Miyata (Shizuoka University)

A Precision-Enhanced Miniature Capacitive Angular Position Sensor Based on TGV Technology

Poster

Paper ID 8835

Author(s): Jiahui Shi (Tsinghua University); Bin Zhou (Tsinghua University); Qi Wei (Tsinghua University); Rong Zhang (Tsinghua University)

Confidence-Aware Whisker Mapping of Rigid and Transient Contacts

Poster

Paper ID 8985

Author(s): Teresa Kent (BioMorphic Intelligence Lab, Delft University of Technology); Tjerk van der Weij (BioMorphic Intelligence Lab, Delft University of Technology); Chaoxiang Ye (BioMorphic Intelligence Lab, Delft University of Technology); Salua Hamaza (BioMorphic Intelligence Lab, Delft University of Technology)

Speaker(s): Teresa Kent (BioMorphic Intelligence Lab, Delft University of Technology)

C1P-N Readout and Interface Techniques for Sensor Arrays

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Reza Askari Moghadam (Sorbonne University)

Robust Readout of Cross-Point Resistive Arrays via Time-Domain Optimization

Poster

Paper ID 8160

Author(s): Taro Tako (The Graduate University for Advanced Studies / National Institute of Informatics); Hiroshi Kaminaga (National Institute of Advanced Industrial Science and Technology); Taisuke Kobayashi (National Institute of Informatics / Graduate University for Advanced Studies)

Speaker(s): Taro Tako (The Graduate University for Advanced Studies / National Institute of Informatics)

Scalable I2C Matrix Sensing Using Row-Column Line Selection for Dense Environmental Sensor Arrays

Poster

Paper ID 8518

Author(s): Jinseong Lee (Incheon National University); Sungtek Kahng (Incheon National University); Byoung-Jo Choi (Incheon National University)

Crosstalk Suppression in a Flexible Multiplexed Piezoresistive Pressure Matrix with Edge-Mounted Per-Cell Diode Isolation

Poster

Paper ID 8595

Author(s): Jonas Rossavik (Norwegian University of Science and Technology); Håvard Vestad (Norwegian University of Science and Technology); Martin Steinert (Norwegian University of Science and Technology)

Speaker(s): Jonas Rossavik (Norwegian University of Science and Technology)

C1P-O Sensor Data Processing and AI (I) (Option B)

Wed Oct 28, 10:30 – 12:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Artyom Tsanda (Hamburg University of Technology)

Flexible Optical Macrocurvature Sensor Mounted on a Robotic Hand for Static Posture Recognition

Poster

Paper ID 8512

Author(s): Walter Oswaldo Cutipa Flores (Federal University of Technology-Paraná); Marcia Muller (Universidade Tecnológica Federal do Paraná); Jose Luis Fabris (Federal University of Technology-Paraná); Uilian José Dreyer (UTFPR/FUNTEF - 02.032.297-0001-00); José Jair Alves Mendes Júnior (Federal University of Technology-Paraná); André Eugenio Lazzaretti (Federal University of Technology-Paraná)

Speaker(s): Uilian José Dreyer (UTFPR/FUNTEF - 02.032.297-0001-00)

Online Industrial Sensor Drift Identification Using Anomaly Detection Methods

Poster

Paper ID 8689

Author(s): Bruno Salvador Silva (UTFPR, Bosch); Clayton Costa (Dataplay); Bruna Mulinari (Dataplay); André Eugenio Lazzaretti (Federal University of Technology-Paraná)

Speaker(s): André Eugenio Lazzaretti (Federal University of Technology-Paraná)

Device-Free Human Identification Using Spatial Features Extracted from Multiple SISO Wi-Fi CSI

Poster

Paper ID 9058

Author(s): Kenta Watanabe (Iwate University); Daiki Nagao (Graduate School of Arts and Sciences, Iwate University); Naoki Honma (Graduate School of Arts and Sciences, Iwate University); Kentaro Murata (Iwate University); Takeshi Nakayama (Panasonic Corporation); Shoichi Iizuka (Panasonic Corporation); Ryosuke Otomura (Panasonic Corporation)

Speaker(s): Kenta Watanabe (Iwate University)

Towards AI-Based Guard-Door Verification for Inductive Safety Sensors

Poster

Paper ID 9103

Author(s): Mark Locherer (DHBW Ravensburg); Michael Kordovan (ifm electronic gmbh); Bernd Buxbaum (ifm electronic gmbh); Thorsten Kever (DHBW Ravensburg)

Speaker(s): Mark Locherer (DHBW Ravensburg)

A High-Precision Visual Navigation Method for UAV Based on Improved ViT

Poster

Paper ID 9110

Author(s): Yu Cheng (School of Instrument Science and Engineering, Southeast University); Xixiang Liu (School of Instrument Science and Engineering, Southeast University); Shuai Chen (Nanjing University of Science and Technology); Chuan Xu (School of Automation, Nanjing University of Science and Technology)

Speaker(s): Yu Cheng (School of Instrument Science and Engineering, Southeast University)

Design and Towing-Tank Validation of a Distributed Pressure Sensor System for AUV Speed and Drift-Angle Estimation: a Preliminary Comparative Study

Poster

Paper ID 9121

Author(s): Jin-Yeong Park (Korea Research Institute of Ship & Ocean Engineering); Sung-Hoon (KRISO); So Young Sung (Korea Research Institute of Ships and Ocean Engineering); Jungwon Lee (Korea Research Institute of Ships and Ocean Engineering); Aeri Cho (Changwon National University); Hyeon Kyu Yoon (Changwon National University); Ji-Hye Kim (Changwon National University)

Speaker(s): Jin-Yeong Park (Korea Research Institute of Ship & Ocean Engineering)

Segment-Wise Early Failure Detection in Single Point Micro Incremental Forming Using Random Forest Model on Multi-Axis Force Signals

Poster

Paper ID 9125

Author(s): Vijay Kumar Sahu (IIT Bhilai); Avishek Adhikary (Indian Institute of Technology Bhilai); Purnendu Das (IIT Bhilai); Kaushik Bandyopadhyay (Indian Institute of Technology Bhilai)

Speaker(s): Avishek Adhikary (Indian Institute of Technology Bhilai)

Physics-Grounded Monocular Video-to-Radar Synthesis for Cross-Modal Data Augmentation

Poster

Paper ID 9139

Author(s): Yuxiang Qiu (University of Tokyo); Jarred Fastier-Wooler (University of Tokyo); Shun Muramatsu (The University of Tokyo); Michitaka Yamamoto (University of Tokyo); Toshihiro Itoh (University of Tokyo)

Speaker(s): Yuxiang Qiu (University of Tokyo)

A Radar-Acoustic Sensor Fusion Unobtrusive System for Imaging High-Impact Regions Inside Opaque Rotating Ball Mills

Poster

Paper ID 9140

Author(s): Raj Rakshit (Tata Consultancy Services Ltd.); Mayukh Biswas (TCS Research); Chirabrata Bhaumik (TCS Research); Arun Kumar Majumder (Indian Institute of Technology Kharagpur)

Speaker(s): Raj Rakshit (Tata Consultancy Services Ltd.)

Invariant Robust Cooperative Navigation for Multi-Robot Systems Under Compound Anomalies

Poster

Paper ID 9150

Author(s): Hebin Yu (Southeast University); Xixiang Liu (School of Instrument Science and Engineering, Southeast University); Xu Li (Southeast University)

Speaker(s): Hebin Yu (Southeast University)

ILC Event - Workshop on Sensor Industry Grand Challenges and Standards

Wed Oct 28, 12:00 – 13:00 · J.F. Staal

Speaker(s): Stephen Bart (Distinguished Member of Technical Staff The Charles Stark Draper Laboratory); Bruce Hecht (VG2PLAY, USA); R.R. Venkatesha Prasad

Wednesday Lunch

Wed Oct 28, 12:00 – 13:00 · Shipping, Exchange & Mercurius Hall

C2L-F Biomedical Sensing and Signal Processing

Wed Oct 28, 13:00 – 14:30 · Leeuwen I and II

Chair(s): Geethu Joseph (Delft-University-of-Technology); Hengky Chandralalim (U.S. Air Force Institute of Technology)

Low-Power Low-Noise Reconfigurable Amplifier for Biosignal Acquisition

Paper ID 8622

Author(s): Julia Aragues (University of Zaragoza); Belen Calvo (University of Zaragoza); Nicolas Medrano (University of Zaragoza)

Speaker(s): Julia Aragues (University of Zaragoza)

Fast, Low-Ripple and Small Area Interleaved Regulated Charge Pumps for In-Vivo Imaging

Paper ID 8600

Author(s): Ahmed Hashem (Microelectronic Circuits Centre Ireland, Tyndall National Institute); Tarek Lule (STMicroelectronics); Ray Burke (Tyndall National Institute); Daniel O'Hare (MCCI, Tyndall National Institute)

Speaker(s): Ahmed Hashem (Microelectronic Circuits Centre Ireland, Tyndall National Institute)

Quantitative Evaluation of Heartbeat-Triggered Signal Averaging for Remote Phonocardiography

Paper ID 8525

Author(s): Shun Muramatsu (The University of Tokyo); Kosuke Kurihara (Tokyo University of Science); Jarred Fastier-Wooler (University of Tokyo); Michitaka Yamamoto (University of Tokyo); Toshihiro Itoh (University of Tokyo)

Speaker(s): Shun Muramatsu (The University of Tokyo)

Beyond Conventional Blood Pressure: Arterial Stiffness Assessment Using Reflection Transit Time from a Cuff Pressure Transducer

Paper ID 8805

Author(s): Akashkumar M L (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Aiswarya C S (Indian Institute of Technology Madras); Sujay Shanthakumar (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Raj Kiran V (Indian Institute of Technology Madras); Jayaraj Joseph (Indian Institute of Technology Madras)

Speaker(s): Jayaraj Joseph (Indian Institute of Technology Madras)

Non-Contact Assessment of an Ex Vivo Heart in a Custom Machine Perfusion System

Paper ID 9017

Author(s): Abirami Selvaraj (Indian Institute of Technology Madras); Priyanka N Prem (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Raj Kiran V (Healthcare Technology Innovation Center, Indian Institute of Technology Madras); Chandan Karmakar (Deakin University); Jayaraj Joseph (Indian Institute of Technology Madras); Nabeel PM (Indian Institute of Technology Madras)

Speaker(s): Nabeel PM (Indian Institute of Technology Madras)

Magnetic Orientation and Localisation Based on MRI Concomitant Fields

Paper ID 8682

Author(s): asmae agouram (Strasbourg University); Jean-Baptiste Schell (University of Strasbourg, CNRS, ICube); Elodie Breton (University of Strasbourg, CNRS, ICube); Jonathan Vappou (ICube/IGT CNRS/INSERM/University of Strasbourg); Loïc Cuvillon (University of Strasbourg, CNRS, ICube); Paolo Cabras (University of Strasbourg, CNRS, ICube); Jean-Baptiste Kammerer (University of Strasbourg, CNRS, ICube); Morgan Madec (University of Strasbourg); Luc Hébrard (ICube Laboratory, University of Strasbourg)

Speaker(s): asmae agouram (Strasbourg University)

C2L-G Biosensors for Biomedical Diagnostics

Wed Oct 28, 13:00 – 14:30 · Goudriaan I and II

Chair(s): Massimo Mastrangeli (Delft University of Technology); Yoshikazu Hirai (Kyoto University)

Real-Time Label-Free Detection of Cardiac Troponin I-C Using Lock-In Capacitive Biosensing

Paper ID 8636

Author(s): Tu Anh Le (EPFL); Lotte De Schrijver; Damien Maillard (École Polytechnique Fédérale de Lausanne); Alireza Yazdi (Queen Mary University of London); Anthony Mathur (Queen Mary University of London); Adrian Mihai Ionescu (École Polytechnique Fédérale de Lausanne)

Speaker(s): Tu Anh Le (EPFL)

Femtogram-Level Four-Target Electrochemical Immunosensor Panel for Alzheimer's Disease Biomarkers with Systematic Cross-Reactivity Mapping

Paper ID 9024

Author(s): Nehal Ghoneim (American University in Cairo - EPFL); Ahmed Abdellatif (American University in Cairo); Sandro Carrara (EPFL)

Molecular Pendulum Sensor for Direct Monitoring of CEA in Patient-Derived Organoid Supernatants Toward Personalized Drug Screening

Paper ID 8699

Author(s): Songxue Chen (Tianjin University); Rui Chen; Dachao Li (State Key Laboratory of Precision Measurement Technology and...); Xiaoping Li (Tianjin University)

Speaker(s): Songxue Chen (Tianjin University)

Ground Validation of the APHRODITE Lab-on-Chip Biosensor for International Space Station Operations

Paper ID 8341

Author(s): Lorenzo Nardi (Sapienza University of Rome); Parsa Abbasrezaee (Sapienza University of Rome); Thiago Baratto de Albuquerque (Sapienza University of Rome); Giulia Petrucci (Sapienza University of Rome); Nicola Lovecchio (Sapienza University of Rome); Venkata Sai Siva S. Emani (Sapienza University of Rome); Sahiti Sriramoju (Sapienza University of Rome); Vahid Omrani (Sapienza University of Rome); Domenico Caputo (Sapienza University of Rome); Seyedeh Rojin Shariati Pour (University of Bologna); Afsaneh Emami Amin (University of Bologna); Martina Zangheri (University of Bologna); Donato Calabria (University of Bologna); Massimo Guardigli (University of Bologna); Elisabetta Marrucci (Kayser Space); Augusto Nascetti (Sapienza University of Rome); Mara Mirasoli (University of Bologna)

Low-Noise Readout for Micropore Sensing and Reliable Discrimination of Microparticles

Paper ID 8557

Author(s): K Ashoka Deepthi (India Institute of Science, Bengaluru); Manoj Varma (Indian Institute of Science); Arup Polley (Indian Institute of Science)

Speaker(s): K Ashoka Deepthi (India Institute of Science, Bengaluru)

C2L-D Chemical, Electrochemical and Gas Sensors 3

Wed Oct 28, 13:00 – 14:30 · Mees I

Chair(s): Paul Vulto (MIMETAS); han shao (Tyndall National Institute)

A Monolithically Integrated MEMS Catalytic Combustion Methane Sensor with Independent Heating and Sensing Electrodes

Paper ID 8274

Author(s): Di He (University of Science and Technology of China); Qiuju Wu (University of Science and Technology of China); Dongcheng Xie (Micro Nano Sensing (Hefei) Technology CO., Ltd.); Dongwen Wang (University of Science and Technology of China); Lei Xu (University of Science and Technology of China)

Speaker(s): Di He (University of Science and Technology of China)

Towards Ultra-Localized Functionalization of ULP MEMS Gas Sensors by Dry Printing Based on Spark Ablation

Paper ID 8315

Author(s): Elena Spagnoli (National Research Council); Stefano Zampolli (National Research Council of Italy); Ivan Elmi (National Research Council of Italy); Nicola Patelli (National Research Council of Italy); Nigel Rising (VSParticle BV); Victoria Shalabaeva (VSParticle B.V.); Leandro Sacco (VSParticle B.V)

Speaker(s): Elena Spagnoli (National Research Council)

Pressure Sensitivity of Thermal Resistance in Micromachined Structures

Paper ID 8745

Author(s): Alexander Kaufmann (Infineon Technologies Dresden AG & Co. KG); Andrey Kravchenko (Infineon Technologies Dresden AG & Co. KG); Vladislav Komenko (Infineon Technologies Dresden AG & Co. KG); Matthias Eberl (Infineon Technologies AG); Sophie Emperhoff (Infineon Technologies AG); Maximilian Herrmann (Infineon Technologies AG); Hoang Tran (Infineon Technologies AG); Yvonne Joseph (Freiberg University of Mining and Technology)

Site Selective Integration of Electrochemical Sensors on Multielectrode Arrays for Multiplexed Neurotransmitter Monitoring

Paper ID 8532

Author(s): Harini Gopalakrishnan (Katholieke Universiteit Leuven); Olivier Deschaume (Katholieke Universiteit Leuven); Myles Mc Laughlin (Katholieke Universiteit Leuven); Carmen Bartic (Katholieke Universiteit Leuven)

Speaker(s): Harini Gopalakrishnan (Katholieke Universiteit Leuven)

H+ Concentration Sensing by 2DHG Modulation in H-Terminated Diamond

Paper ID 8541

Author(s): Malik Sheeza Sheerth (Indian Institute of Technology); Tanushree Dey (Indian Institute of Technology Bombay); Nashra Khalid (Indian Institute of Technology Bombay); Aaqib Sheikh (Indian Institute of Technology Bombay); Padmnabh Rai (Centre For Excellence in Basic Sciences, University of Mumbai); Swaroop Ganguly (Indian Institute of Technology Bombay); Dipankar Saha (Indian Institute of Technology Bombay); Siddharth Tallur (Indian Institute of Technology Bombay)

Speaker(s): Malik Sheeza Sheerth (Indian Institute of Technology)

C2L-H Emerging Sensor Technologies and Applications 2

Wed Oct 28, 13:00 – 14:30 · Penn I

Chair(s): Gayathri Pillai (Indian Institute of Science, Bangalore); Ravi Prakash (Carleton University)

LIGA-Microspectrometer Sensor for In-Situ Cure Monitoring of Epoxy-Matrix CFRP Prepregs

Paper ID 8178

Author(s): Yuchen Hsu (National Tsing Hua University); Mao Chen Chen (National Tsing Hua University); Chitsung Hong (Spectrochip.Inc); Hung-Wei Huang (National Taiwan University of Science and Technology); Cheng-Hao Ko (National Taiwan University of Science and Technology); Weileun Fang (National Tsing Hua University)

Speaker(s): Mao Chen Chen (National Tsing Hua University)

Gradient-Field Frequency Encoding for 1D Localization of Magneto-Mechanical Resonators

Paper ID 8258

Author(s): Fabian Mohn (Technische Universität Hamburg); Martin Möddel (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Tobias Knopp (Hamburg University of Technology / University Medical Center Hamburg-Eppendorf)

Speaker(s): Fabian Mohn (Technische Universität Hamburg)

Mid-Wave Infrared 64x64 Focal Plane Array Exploiting Monolithic Integration of InSb on GaAs

Paper ID 8433

Author(s): Paul Harrison (University of Glasgow); Richard Maguire (Thales UK Ltd); Nicholas Wood (Thales UK Ltd); David Cumming (University of Glasgow); Vincenzo Pusino (University of Glasgow)

Speaker(s): Vincenzo Pusino (University of Glasgow)

Electron-Beam Detector Based on Vo2 Metal-Insulator Transition Oscillators

Paper ID 8850

Author(s): Ehsan Ansari (EPFL); Adrian Mihai Ionescu (École Polytechnique Fédérale de Lausanne)

Speaker(s): Ehsan Ansari (EPFL)

A MEMS-Integrated Electron Spin Gyroscope

Paper ID 8941

Author(s): Massood Tabib-Azar (University of Utah)

Fast and Spatially-Resolved Humidity Sensing with Metal-Oxide Nanoparticles Functionalized Capacitive CMOS Arrays

Paper ID 8270

Author(s): Partha Bhattacharya (Albert Ludwig University of Freiburg); Rakshan Bhandary (Albert Ludwig University of Freiburg); Tao Shen (Delft University of Technology); Murali Ghatkesar (Delft University of Technology); Peter Steeneken (Delft University of Technology); Frans Widdershoven (NXP Semiconductors); Peter Woias (Albert Ludwig University of Freiburg); Suman Kundu (IMTEK, University of Freiburg)

C2L-B Optical Sensors 7 (Option B)

Wed Oct 28, 13:00 – 14:30 · Diamond I

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas); Ravi Prakash (Carleton University)

Biaxial Optical Cantilever Combining On-Chip Patterned Laser and Sampling Moiré Method

Paper ID 8526

Author(s): Soya Sato (National Institute of Advanced Industrial Science and Technology (AIST)); Toshihiro Shiratori (Keio University); Kazuyoshi Hirose (Hamamatsu Photonics K.K.); Hiroki Kumon (Hamamatsu Photonics K.K.); Hiroki Kamei (Hamamatsu Photonics K.K.); Shu Honma (Hamamatsu Photonics K.K.); Yuki Okamoto (National Institute of Advanced Industrial Science and Technology (AIST)); Yusuke Takei (National Institute of Advanced Industrial Science and Technology (AIST)); Hidetoshi Takahashi (Keio University)

Novel Sputtered Metal Oxides (SnO₂:F, HfO₂, WO₃) for High-Sensitivity HMR-Based Optical Refractometers

Paper ID 8841

Author(s): Angel Correa Fernández (Public University of Navarra); Elieser Ernesto Gallego Martínez (Public University of Navarra); Carlos Ruiz-Zamarreño (UPNA); Ignacio Raul Matías (Public University of Navarra)

Speaker(s): Elieser Ernesto Gallego Martínez (Public University of Navarra)

Absorbance-Based Lactate and Glucose Sensing in Skin-Mimicking Media Using Needle-Integrated Optical Waveguide Sensor

Paper ID 9049

Author(s): Daigo Koiwa (Tohoku University); Yoichi Haga (Tohoku University); Noriko Tsuruoka (Tohoku University)

Speaker(s): Noriko Tsuruoka (Tohoku University)

Additively Manufactured Colloidal Quantum Dots Embedded Core-Cladding Waveguides for Wavelength-Based Thermal Sensing

Paper ID 9061

Author(s): Casey Shi (Johns Hopkins University); Ronald Garcia (Johns Hopkins University); Patrick Dass (Johns Hopkins University); Joshua Sic (Johns Hopkins University); Joel Rentas-Velez (Johns Hopkins University); Daniel Ames (Johns Hopkins University); Kaveh Barri (Johns Hopkins University); Nathan Brown (Johns Hopkins University); Jacob Lombardo (Johns Hopkins University); Jochen Mueller (Johns Hopkins University); Michael Sherburne (Johns Hopkins Applied Physics Laboratory)

Speaker(s): Casey Shi (Johns Hopkins University)

Multiplex Optical Detection of Bacteria in Water Using a Cell Imprinted Polymer-Based Microfluidic Sensor

Paper ID 9096

Author(s): Pouya Rezai (George Mason University); Ali Doostmohammadi (York University); Islam Mahmoud (York University)

A Dual-Path Optical Clip for Bubble-Aware Continuous Monitoring in Surgical Drainage Tubing

Paper ID 9101

Author(s): CHUN-WEI CHIU (National Yang Ming Chiao Tung University); Po-Chun Kuo (Department of Electronics and Electrical Engineering, National Yang Ming Chiao Tung University); Chang Mouwei; Yu-Te Liao (National Yang Ming Chiao Tung University); Kun-Ta Wu (Division of General Surgery, Department of Surgery, Taichung Veteran General Hospital)

Speaker(s): CHUN-WEI CHIU (National Yang Ming Chiao Tung University)

C2L-C Physical Sensors: Inertial (Option B)

Wed Oct 28, 13:00 – 14:30 · Diamond II

Chair(s): Giacomo Langfelder (Politecnico di Milano); Christina Schober (Honeywell/Quest)

Design of a Passive High-G MEMS Acceleration Sensor for Drop Tests

Paper ID 9042

Author(s): Sebastian Hermann (Bosch Sensortec GmbH); Burkhard Kuhlmann (Bosch Sensortec GmbH); Andrea Guerrieri (Bosch Sensortec GmbH); Jeffrey Gregory (Bosch Sensortec GmbH); Andreas Lassl (Robert Bosch GmbH); André Zimmermann (University of Stuttgart, Institute for Micro Integration (IFM))

Speaker(s): Sebastian Hermann (Bosch Sensortec GmbH)

Influence of Process Variations on Offset Temperature Drift in Mode-Split MEMS Gyroscopes: Improving Phase Error Temperature Model

Paper ID 9044

Author(s): Max Laser (Bosch Sensortec GmbH); Moritz Bühler (Bosch Sensortec GmbH); Miloš Miloš Vujadinović (Bosch Sensortec GmbH); André Zimmermann (University of Stuttgart, Institute for Micro Integration (IFM))

Speaker(s): Max Laser (Bosch Sensortec GmbH)

Enhanced Gravimetric Sensitivity of Capacitive MEMS Resonators via Geometric Design Modification

Paper ID 9069

Author(s): Haleh Nazemi (University of Windsor); Mohd Farhan Arshi (University of Windsor); Pavithra Munirathinam (University of Windsor); Arezoo Emadi (University of Windsor)

Speaker(s): Arezoo Emadi (University of Windsor)

Opto-Inertial Sensor Fusion to Correct Slip Displacement Artifacts for Non-Rigidly Attached Inertial Measurement Units

Paper ID 9090

Author(s): Savannah Kipperman (University of Wisconsin-Madison); Jeneel Kachhadiya (University of Wisconsin-Madison); Haneesh Kesari (Brown University); Joseph Andrews (University of Wisconsin - Madison)

Speaker(s): Savannah Kipperman (University of Wisconsin-Madison)

FM Rate Detection in Dual-Shell Gyroscopes Utilizing Phononic Frequency Combs

Paper ID 9104

Author(s): Elena Wolgamot (University of California, Irvine); Lois Meira Lopez (University of California, Irvine); Paul Carter (University of California, Irvine); Andrei Shkel (University of California, Irvine)

Speaker(s): Elena Wolgamot (University of California, Irvine)

Improved Full-Temperature Calibration Method of Metal-Based Quartz Resonant Accelerometers with High Resolution and Low Loss

Paper ID 9124

Author(s): Shengxiang Zhou (Xi'an Jiaotong University); Hong Xue (Xi'an Jiaotong University); Bing Bai (Xi'an Jiaotong University); Cun Li (Xi'an Jiaotong University); Yulong Zhao (Xi'an Jiaotong University, State Key Laboratory for Manufact...)

Speaker(s): Shengxiang Zhou (Xi'an Jiaotong University)

C2L-A Radar Applications

Wed Oct 28, 13:00 – 14:30 · Van Oldenbarnevelt

Chair(s): Youngwook Kim (Sogang University Korea); Zahra Abbasi (University of Calgary)

A Physics-Based Directional Doppler Event Transform for Privacy-Preserving Bedroom Fall Detection

Paper ID 8693

Author(s): Zirui Lin (University of British Columbia); heqing zhang (university of british columbia okanagan); Zheng Liu (University of British Columbia); Ling Bai (University of British Columbia); Gaozhi Xiao (National Research Council Canada)

Speaker(s): Gaozhi Xiao (National Research Council Canada)

Self-Supervised Denoising of mmWave Radar Signals for Contactless Heart-Rate Estimation

Paper ID 8718

Author(s): Kevin Tonkich (Keio University); Shengze Wang (Keio University); Tomoaki Ohtsuki (Keio University)

Speaker(s): Kevin Tonkich (Keio University)

Fusing Signal Processing and Deep Learning for Robust In-Cabin Seat Occupancy Detection with FMCW Radar

Paper ID 8312

Author(s): Evgenia Slivko (Infineon Technologies AG); Liam Huber (Infineon Technologies AG); Rodrigo Perez (Infineon Technologies AG); Kay Bierzynski (Infineon Technologies AG); Lorenzo Servadei (Technical University of Munich); Robert Wille (Technical University of Munich)

Sparse Radar Tokens for Efficient 3-D Human Pose Estimation with mmWave Radar

Paper ID 8723

Author(s): Tatsunori Saito (Keio University); TOMOAKI OTSUKI (Keio University)

Speaker(s): Tatsunori Saito (Keio University)

Edge-Local Posterior-Conserving LoRA Decoding for Cross-Band Radar Human Activity Recognition

Paper ID 8692

Author(s): Zirui Lin (University of British Columbia); heqing zhang (university of british columbia okanagan); Zheng Liu (University of British Columbia); Ling Bai (University of British Columbia); Gaozhi Xiao (National Research Council Canada)

Speaker(s): Gaozhi Xiao (National Research Council Canada)

RadarsCalib: BEV-Space Dynamic Extrinsic Calibration for Drifted Multi-Radar Detection

Paper ID 8399

Author(s): Zuyuan Guo (University of Electronic Science and Technology of China); Yu Huang (University of Electronic Science and Technology of China); Hongfu Li (University of Electronic Science and Technology of China); Wei Yi (University of Electronic Science and Technology of China)

Speaker(s): Zuyuan Guo (University of Electronic Science and Technology of China)

C2L-I Sensor Materials, Fabrication and Packaging 3 (Option B)

Wed Oct 28, 13:00 – 14:30 · Penn II

Chair(s): Camilla Baratto (INO-CNR); Bérengère Lebental (Gustave Eiffel University)

Hierarchical Metal-Oxide-Semiconductor Nanowire-on-Microwire Structures for Room-Temperature Detection of Biomarker Molecules in Aqueous Solution

Paper ID 8632

Author(s): Yoshinari Kimura (Tohoku University); Hironori Tohmyoh (Tohoku University)

Integration of Thin-Film Strain Gauges Into Additively Manufactured Components Using Laser-Based Directed Energy Deposition

Paper ID 9071

Author(s): Eileen Müller (Leibniz University Hanover); Lars Bachert (Institute for Manufacturing Technology and Production Systems); Hilke Petersen (Institute of Production Engineering and Machine Tools); Jan Aurich (Institute for Manufacturing Technology and Production Systems); Daniel Klaas (Leibniz University Hanover); Folke Dencker (Leibniz University Hanover); Marc Christopher Wurz (Leibniz University Hanover)

A Laser Induced Graphene Based Flexible Strain Sensor Using Tri-Ethylene Glycol/PDMS Composite

Paper ID 9091

Author(s): Muhammad Luqman Haider (The University of Texas at Dallas); Jinwon Jeong (Baylor University); Tanzila Noushin (Baylor University); YUN TING HSIA (Baylor University); SEON JEONG KIM (Hanyang University); Jeong Bong Lee (Baylor University)

C2L-E Wearable Sensors and Systems 2: Mechanical (Option B)

Wed Oct 28, 13:00 – 14:30 · Mees II

Chair(s): Darrin J Young (University of Utah)

Interfacially Bridged Laser-Induced Graphene/MoS₂/PEDOT:PSS Network for Flexible Pressure Sensing in Human and Robotic Motion Monitoring

Paper ID 9079

Author(s): Yaqi Wang (Beijing Information Science and Technology University); Mengyao Tian (Beijing Information Science and Technology University); Fan Wu (Laboratory of Intelligent Microsystems, Beijing Information ...); Guodong Zhang (Beijing Information Science and Technology University); Yingjie Chen (Laboratory of Intelligent Microsystems, Beijing Information ...); Misheng Liang (Beijing Information Science and Technology University); Rui You (Beijing Information Science and Technology University)

Speaker(s): Yaqi Wang (Beijing Information Science and Technology University)

Optimal Sensors Placement-Driven Design of FBG Based Insole for Plantar Pressure Monitoring in Classical Ballet

Paper ID 9097

Author(s): Leonardo Maggioni (Dept. of Mechanical Engineering, Politecnico di Milano); Laura Farina (Ballet School of Teatro alla Scala, Teatro alla Scala); Alfredo Cigada (Polytechnic University of Milan); Paola Saccomandi (Politecnico di Milano)

Speaker(s): Leonardo Maggioni (Dept. of Mechanical Engineering, Politecnico di Milano)

A Flexible and Stretchable MXene-Hydrogel Sensor with Geometry-Enhanced Selectivity for Multi-Axial Strain Sensing

Invited Pre-Published Journal Paper

Paper ID 9111

Author(s): Joychandra Nongthombam (BITS Pilani Hyderabad campus); Nilesh Goel (Birla Institute of Technology and Science); Parikshit Sahatiya (BITS Pilani Hyderabad Campus)

Speaker(s): Joychandra Nongthombam (BITS Pilani Hyderabad campus)

Effect of Sternal Sensor Location on Seismocardiography for Severe Aortic Stenosis Detection

Paper ID 9148

Author(s): Ismail Elnaggar (University of Turku); Jouni Pykari (Turku University Hospital); Tuija Vasankari (Turku University Hospital); Arman Anzanpour (University of Turku); Matti Kaisti (University of Turku); Antti Airola (University of Turku); Mikko Savontaus (Turku University Hospital); Tero Koivisto (University of Turku)

Speaker(s): Tero Koivisto (University of Turku)

Toward Motion Capture Textiles: a Batteryless IMU Array Powered and Networked Through a Conductive-Fabric Bus

Paper ID 9158

Author(s): Ryusei Miyakawa (Kochi University of Technology); Akihito Noda (Kochi University of Technology)

Speaker(s): Ryusei Miyakawa (Kochi University of Technology)

Protocol-Flexible Custom NFC for Wire-Free Wearable Sensor Networks

Paper ID 9167

Author(s): Riku Maeda (Kochi University of Technology); Akihito Noda (Kochi University of Technology)

Speaker(s): Riku Maeda (Kochi University of Technology)

C3P-M Advanced Biosensing and Integrated Sensor Systems

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Massimo Mastrangeli (Delft University of Technology); Yoshikazu Hirai (Kyoto University)

Towards a Planarized Open-Ended Coaxial Probe Sensor for Dielectric Spectroscopy in Microphysiological Systems

Poster

Paper ID 8212

Author(s): Yana Brodskaya (Delft University of Technology); Kevin dos Reis Vezo (Global Factories); Tim Hosman (Delft University of Technology); Massimo Mastrangeli (Delft University of Technology); Marco Spirito (Delft University of Technology)

Speaker(s): Yana Brodskaya (Delft University of Technology)

A Fluorescence Flow Cytometer Using a Diffractive Optical Element for Uniform Illumination

Poster

Paper ID 8390

Author(s): Long Fan (Aerospace Information Research Institute, Chinese Academy of...); Chiyuan Gao (Aerospace Information Research Institute, Chinese Academy of...); Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...); Xiaoye Huo (Aerospace Information Research Institute, Chinese Academy of...); Yi Zhang (Chinese Academy of Sciences); Jian Chen (Aerospace Information Research Institute, Chinese Academy of...)

Speaker(s): Junbo Wang (Aerospace Information Research Institute, Chinese Academy of...)

Neural Network-Based Multi-Wavelength PPG Signal Denoising for Wearable Devices

Poster

Paper ID 8421

Author(s): Giada Capraro (STMicroelectronics); Nicola Picozzi (STMicroelectronics); Alessandro Gumiero (STMicroelectronics); Luigi Della Torre (STMicroelectronics)

Speaker(s): Nicola Picozzi (STMicroelectronics)

Partially-Transparent Ionic Polymer–Metal Composite Sensors for Biomechanical Sensing in Organs-on-Chip

Poster

Paper ID 8811

Author(s): Alireza Tajeddin (TU Delft); Antonio Velarte (University of Zaragoza); Romina Sattari (Delft University of Technology); Juan Zhang (Leiden University Medical Center); Vincent Portero (Leiden University Medical Center); Arantxa Otin (University of Zaragoza); Daniël Pijnappels (Leiden University Medical Center); Massimo Mastrangeli (Delft University of Technology)

Speaker(s): Alireza Tajeddin (TU Delft)

C3P-J Benchmarking and Reproducibility in Soft Tactile Sensing

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Matteo Lo Preti; Perla Maiolino (University of Oxford)

From Contact Models to Tactile Sensors: Simulation-Driven Sensor Fidelity Trade-Offs for Soft Robotic Continuum Manipulators

Poster

Paper ID 8282

Author(s): Valdrin Aslani (Technical University of Munich, Chair of Media Technology); Samuel Pilch (University of Stuttgart); Eckehard Steinbach (Technical University of Munich); Oliver Sawodny (Universität Stuttgart)

Speaker(s): Valdrin Aslani (Technical University of Munich, Chair of Media Technology)

A 6-DOF Force Actuation System for Electromechanical Characterization of Tactile Sensors

Poster

Paper ID 9015

Author(s): Subhajit Nath (Tata Consultancy Services); Shuvraneel Roy (Tata Consultancy Services); Kalash Chandakapure (Tata Consultancy Services); Sarvesh Sortee (Tata Consultancy Services); Sumanta Ghosh (Tata Consultancy Services); PARAMITA KAR CHOUDHURY (Tata Consultancy Services); Titas Bera (TATA Consultancy Services)

Speaker(s): Titas Bera (TATA Consultancy Services)

C3P-Q Chemical, Electrochemical and Gas Sensors (Option B)

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Filiberto Ricciardella (TNO)

Temperature-Aware Electrochemical Sensor for Free Chlorine Estimation with Deep Learning

Poster

Paper ID 9040

Author(s): Mayano Yamanouchi (Aoyama Gakuin University); Yasufumi Yokoshiki (Aoyama Gakuin University); Koki Anzai (Aoyama Gakuin University); Shinji Koh (Aoyama Gakuin University); Takeshi Watanabe (Aoyama Gakuin University)

Speaker(s): Mayano Yamanouchi (Aoyama Gakuin University)

A pseudo-Supervised Approach for Food Spoilage Detection Using Metal Oxide Semiconductor Gas Sensors and Temperature Modulation

Poster

Paper ID 9162

Author(s): Hamza Ali Imran (Lab for Measurement Technology, Saarland University); Akshay Markanday (Bosch Sensortec GmbH, Gerhard-Kindler-Straße 9, 72770 Reutlingen, German); Luigi Masi (Lab for Measurement Technology, Saarland University); Andreas Schütze (Sarland University, Lab for Measurement Technology); Christian Bur (Universität des Saarlandes)

Speaker(s): Hamza Ali Imran (Lab for Measurement Technology, Saarland University)

Rapid Prediabetes Screening with a VOC Nanosensor: a Novel Saturation-Onset Prediction Driven Classifier

Poster

Paper ID 9170

Author(s): Tanushree Banerjee (Tata Consultancy Services Ltd.); Sakyajit Bhattacharya (TCS Research, Tata Consultancy Services); Souradeep Roy (Indian Institute of Technology Kharagpur); Prasanta Kumar Guha (Indian Institute of Technology Kharagpur); PARAMITA KAR CHOUDHURY (Tata Consultancy Services); Avik Ghose (Tata Consultancy Services Limited); Arpan Pal (Tata Consultancy Services (TCS)); Sanjay Kimbahun (Tata Consultancy Services)

Speaker(s): PARAMITA KAR CHOUDHURY (Tata Consultancy Services)

Tailoring Response and Recovery of Light Activated Printed CuO/Cu₂O-Based Acetone Sensors

Poster

Paper ID 9183

Author(s): Amit Chatterjee (Silicon Austria Labs GmbH); Bernhard Jakoby (Johannes Kepler University Linz); Jürgen Kosel (Silicon Austria Labs GmbH); Mani Teja Vijjapu (Silicon Austria Labs GmbH)

Speaker(s): Amit Chatterjee (Silicon Austria Labs GmbH)

C3P-K Optical Sensors 6

Wed Oct 28, 14:30 – 16:00 • Shipping, Exchange & Mercurius Hall

Chair(s): Eric Fujiwara (Universidade Estadual de Campinas)

MIP Modified U-Bent Optical Fiber for the Detection of Quinalphos

Poster

Paper ID 8508

Author(s): Mohit Sharma (Indian Institute of Technology Bombay); Nirmal Punjabi (Indian Institute of Technology Bombay); Suparna Mukherji (Indian Institute of Technology Bombay); Soumyo Mukherji (Indian Institute of Technology Bombay)

Speaker(s): Mohit Sharma (Indian Institute of Technology Bombay)

Advanced Tactile Pressure Sensors Enabled by Multicore Fiber Bragg Gratings

Poster

Paper ID 8555

Author(s): Arezoo Sheykhan (University of Aveiro); Ricardo Oliveira (University of Aveiro)

Speaker(s): Arezoo Sheykhan (University of Aveiro)

Pseudo-Vernier Integrated Spectrometer in Silicon Nitride for Lab-on-Chip Applications

Poster

Paper ID 8741

Author(s): Asih Setiarini (LAAS-CNRS, University of Toulouse, Toulouse INP); Waqas Jahangir (National University of Sciences and Technology); Usman Zabit (National University of Sciences and Technology); Olivier Bernal (LAAS-CNRS, University of Toulouse, Toulouse INP); Han Cheng Seat (LAAS-CNRS, University of Toulouse, Toulouse INP); Clément Deleau (RIKEN Cluster for Pioneering Research); Philippe Arguel (LAAS-CNRS, University of Toulouse); Frederic Surre (University of Glasgow)

Speaker(s): Asih Setiarini (LAAS-CNRS, University of Toulouse, Toulouse INP)

Full GPU Accelerated Heterodyne Distributed Acoustic Sensing for Real-Time Two-Phase Flow Analysis

Poster

Paper ID 8773

Author(s): Emmanuell Scolimoski (Universidade Tecnológica Federal do Paraná); Eduardo Henrique Dureck (Universidade Tecnológica Federal do Paraná); Douglas Silva de Azevedo (Federal University of Technology - Parana); Danilo Fernandes Gomes (Federal University of Technology-Paraná); Beatriz Brusamarello (Federal University of Technology-Paraná); Daniel Rodrigues Pipa (Universidade Tecnológica Federal do Paraná); Jean Carlos Cardozo Da Silva (Federal University of Technology-Paraná); Manoel Feliciano Da Silva Junior (Petrobras); Sérgio Taveira de Camargo Júnior (Petrobras); Cícero Martelli (Federal University of Technology-Paraná)

Speaker(s): Cícero Martelli (Federal University of Technology-Paraná)

Adhesive Layer Effect on Strain Transfer in Fiber Bragg Grating Sensors: Theoretical and Experimental Analysis

Poster

Paper ID 8819

Author(s): Leonardo Maggioni (Dept. of Mechanical Engineering, Politecnico di Milano); Leonardo Bianchi (Department of Mechanical Engineering, Politecnico di Milano, Italy); Alfredo Cigada (Polytechnic University of Milan); Paola Saccomandi (Politecnico di Milano)

Speaker(s): Leonardo Maggioni (Dept. of Mechanical Engineering, Politecnico di Milano)

Design & Characterization of a Longwave Infrared Hyperspectral Imaging System for Earth-Observations

Poster

Paper ID 8828

Author(s): Avyarthana Ghosh (Tata Consultancy Services); Shubhi Tiwari (Tata Consultancy Services); Shailesh Deshpande (Tata Consultancy Services); Arpan Pal (Tata Consultancy Services (TCS))

Speaker(s): Arpan Pal (Tata Consultancy Services (TCS))

Large-Aperture Compressive MEMS Pitch-Tunable Grating for LiDAR Beam Steering

Poster

Paper ID 8862

Author(s): Ilgar Jafarsadeghipournaki (The University of New South Wales (UNSW)); Aron Michael (University of New South Wales); Hemanshu Pota (University of New South Wales)

Speaker(s): Ilgar Jafarsadeghipournaki (The University of New South Wales (UNSW))

Submillimeter Spatial Resolution OFDR Using Fs-Inscribed Scattering Enhanced Fiber

Poster

Paper ID 8870

Author(s): Chengcheng Zhang (Chinese Academy of Sciences); Wenzhu Huang (Chinese Academy of Sciences); Wentao Zhang (Institute of Semiconductors Chinese Academy of Sciences)

Speaker(s): Wentao Zhang (Institute of Semiconductors Chinese Academy of Sciences)

A Compact 50 nm-Bandwidth SiN Integrated Spectrometer with 0.15-nm Resolution

Poster

Paper ID 8899

Author(s): Asih Setiarini (LAAS-CNRS, University of Toulouse, Toulouse INP); Clément Deleau (RIKEN Cluster for Pioneering Research); Olivier Bernal (LAAS-CNRS, University of Toulouse, Toulouse INP); Han Cheng Seat (LAAS-CNRS, University of Toulouse, Toulouse INP); Francis Jayat (LAAS-CNRS, Toulouse INP); Frederic Surre (University of Glasgow); Philippe Arguel (LAAS-CNRS, University of Toulouse)

Speaker(s): Asih Setiarini (LAAS-CNRS, University of Toulouse, Toulouse INP)

On-Chip Dithering Generation for Non-Uniform Sampling in Optical Feedback Interferometry

Poster

Paper ID 8908

Author(s): Shehryar Khan (National University of Sciences and Technology); Usman Zabir (National University of Sciences and Technology); Asih Setiarini (LAAS-CNRS, University of Toulouse, Toulouse INP); Han Cheng Seat (LAAS-CNRS, University of Toulouse, Toulouse INP); Olivier Bernal (LAAS-CNRS, University of Toulouse, Toulouse INP)

Speaker(s): Olivier Bernal (LAAS-CNRS, University of Toulouse, Toulouse INP)

Spatial Perception for Robotics Using a Frugal Streaming Edge Detection Algorithm with Conventional Multi-Zone Time-of-Flight Sensors

Poster

Paper ID 8910

Author(s): Nour Mhanna (Mines Saint-Étienne); Marc Ramuz (Mines Saint-Étienne); Roger Delattre (Mines Saint-Étienne); Sylvain Blayac (Mines Saint-Étienne)

Speaker(s): Nour Mhanna (Mines Saint-Étienne)

C3P-O Option B Posters (II)

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Dennis Alveringh (University of Twente)

Improvement of Spatial Robustness in UWB Fall Detection via Temporal Differencing

Poster

Paper ID 9039

Author(s): Kamil Alp Çınar (Gebze Technical University); Ahmet Güneş (Faculty of Naval Architecture and Ocean Engineering, Istanbul Technical University, Istanbul 34469,)

Speaker(s): Kamil Alp Çınar (Gebze Technical University)

Embedded Flexible Printed Circuits As Robust Interconnects for 3D-Printed Conductive Sensors

Poster

Paper ID 9047

Author(s): Felix Herbst (Technische Universität Darmstadt); Bastian Latsch (Technische Universität Darmstadt); Caroline Zindler (TU Darmstadt); Lukas Ulmer (TU Darmstadt); Alexander A. Altmann (Technische Universität Darmstadt); Mario Kupnik (Technical University Darmstadt)

Speaker(s): Felix Herbst (Technische Universität Darmstadt)

A 1.4 nm/s $\sqrt{2}$ /√Hz Real-Time Digital Signal Processing Chain on Artix-7 FPGA for Monolithic Sub-0.1 Hz Aerospace Accelerometers

Poster

Paper ID 9075

Author(s): Mattia Tambaro (University of Milano-Bicocca); Fabio D'Ottavi (University of Pavia); Marco Privitera (University of Catania - DIEEI); Elia Arturo Vallicelli (University of Milano-Bicocca); Mario Zannoni (University of Milano-Bicocca); Alfio Dario Grasso (Università degli Studi di Catania); Marcello De Matteis (University of Milano-Bicocca)

Speaker(s): Mattia Tambaro (University of Milano-Bicocca)

Snap-Through Instability in Bistable Piezoelectric MEMS Plates for Ultrasonic Sound Generation and PMUT-to-PMUT Sensing

Poster

Paper ID 9100

Author(s): Mahdi Mortada (TU Wien); Schmid Ulrich (TU Wien); Michael Schneider (TU Wien)

Speaker(s): Mahdi Mortada (TU Wien)

Physics-Based Modeling and Ion Detection in Ternary Aqueous Mixtures Using a Sub-GHz Tri-Band Resonant Sensor

Poster

Paper ID 9164

Author(s): Nima Karbaschi (University of Calgary); Mehri Mehri Ziaee Bideskan (University of Calgary); Zahra Abbasi (University of Calgary)

Speaker(s): Zahra Abbasi (University of Calgary)

Joint Impact of Missing Samples and Finite ADC Resolution on Parameter Estimation from Sensor Signals

Poster

Paper ID 9166

Author(s): Michkath Omanda Bouraima (Missouri University of Science and Technology); Maciej Zawodniok (Missouri S&T)

Speaker(s): Michkath Omanda Bouraima (Missouri University of Science and Technology)

Ruggedized Embedded Ultrasound Sensing in Harsh Conditions: eRTIS in the Wild

[Invited Pre-Published Journal Paper](#) [Poster](#)

Paper ID 9152

Author(s): Dennis Laurijssen (University of Antwerp); Wouter Jansen (Cosys-Lab, University of Antwerp); Arne Aerts (University of Antwerp); Walter Daems (Cosys-Lab, University of Antwerp); Jan Steckel (Cosys-Lab, University of Antwerp)

Speaker(s): Dennis Laurijssen (University of Antwerp)

C3P-N RF and Wireless Sensing

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Gilles Callebaut (KU Leuven)

Phase-Matched Chirps for Energy-Efficient Excitation of Magneto-Mechanical Resonators

[Poster](#)

Paper ID 8434

Author(s): Sarah Reiss (Hamburg University of Technology); Fabian Mohn (Technische Universität Hamburg); Jonas Faltinath (Universitätsklinikum Hamburg-Eppendorf, UKE / Technische Uni...); Tobias Knopp (Hamburg University of Technology / University Medical Center Hamburg-Eppendorf)

Speaker(s): Sarah Reiss (Hamburg University of Technology)

Towards Energy-Neutral IoT Sensors: Low-Cost Chirp-Based Backscattering Node Using a COTS Microcontroller and Multi-Load Front-End

[Poster](#)

Paper ID 8495

Author(s): Tijl Schepens (Katholieke Universiteit Leuven); Liesbet Van der Perre (KU Leuven); Gilles Callebaut (KU Leuven)

Speaker(s): Gilles Callebaut (KU Leuven)

C3P-P Sensor Data Processing and AI (II) (Option B)

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): Evgenia Slivko (Infineon Technologies AG)

Odor Source Localization System Inspired by Odor Information Processing of an Insect

[Poster](#)

Paper ID 9172

Author(s): RYOKO SEKIWA (The Graduate University for Advanced Studies, SOKENDAI); Hirono Ohashi (Tokyo University of Agriculture); Tatsuya Ibuki (Meiji University); Shunsuke Shigaki (National Institute of Informatics)

Speaker(s): RYOKO SEKIWA (The Graduate University for Advanced Studies, SOKENDAI)

Odor-Sensing Drone Equipped with Dual Electroantennogram Sensors Based on Insect Antennae

[Poster](#)

Paper ID 9173

Author(s): Yuji Sukekawa (University of Tokyo); Jeongmin Lee (University of Tokyo); Stephan Shuichi Haupt (University of Tokyo); Ryohei Kanzaki (University of Tokyo); Hidefumi Mitsuno (University of Tokyo)

Speaker(s): Yuji Sukekawa (University of Tokyo)

Sensor Fault Detection and Isolation via Dilated Convolutional Neural Networks

[Invited Pre-Published Journal Paper](#) [Poster](#)

Paper ID 9174

Author(s): Amirshayan Haghipour (Norwegian university of science and Technology (NTNU)); Gianluca Tabella (SINTEF Energi); Pierluigi Salvo Rossi (NTNU, SINTEF Energi)

Speaker(s): Amirshayan Haghipour (Norwegian university of science and Technology (NTNU))

On-Device Hand Keypoint Forecasting on Smart Glasses via Vision-IMU Fusion

[Poster](#)

Paper ID 9181

Author(s): Mo Yang (University of Toronto); Xiaoming Chen (University of Toronto); Alexander Vicol (University of Toronto); Zhicheng Chen (Beijing Jiaotong University); Steve Mann (University of Toronto)

Multi-Axis Force and Moment Estimation Using Spatially Distributed Optical Sensing on the Finger Back

Poster

Paper ID 8625

Author(s): Yu Honda (Kobe University); Ren Ikejima (Kobe University); Sota Himeda (Graduate School of Engineering, Kobe University); Hiroshi Kawaguchi (Kobe University); Shintaro Izumi (Kobe University)

Speaker(s): Yu Honda (Kobe University)

Quantitative Detection of Naproxen Surface Residue Using FTIR Spectroscopy and Partial Least Squares Regression

Poster

Paper ID 8706

Author(s): mehdi faraz (university of Turku); Jukka Heikkonen (university of Turku); Ranti Ranti (university of Turku); Anna Savola (Orion Pharma); Susanna Heikkonen (Orion Pharma); Eero Kiljunen (Orion Pharma); Tuomas Mäkilä (university of Turku)

Speaker(s): mehdi faraz (university of Turku)

High-Fidelity 3D Occupancy and BEV Generation via Semantic Uncertainty Reduction and Cross-Modal LiDAR-Camera Alignment

Poster

Paper ID 9083

Author(s): Khean Thye Bea (National Taipei University of Technology); Shih Chi Tseng (National Taipei University of Technology); Hong Wei Kuo (National Taipei University of Technology); Hsin-Hui Hu (National Taipei University of Technology); Wai Khuen Cheng (PETRONAS University of Technology); Yen-Lin Chen (National Taipei University of Technology)

Speaker(s): Khean Thye Bea (National Taipei University of Technology)

Evaluation of Sub-Epoch Time-Frequency Representations for Clinical PSG-Based Sleep Staging

Poster

Paper ID 9108

Author(s): Keigo Tomihama (Yokohama National University); Takayuki Mukaeda (Yokohama National University); Keisuke Shima (Japan); Kuniharu Takei (Hokkaido University); Nanako Shiroshita (Juntendo University); Nobuyuki Kagiya (Juntendo University); Takatoshi Kasai (Juntendo University)

Speaker(s): Keigo Tomihama (Yokohama National University)

Cuffless Blood Pressure Estimation from Wearable Photoplethysmography and Windkessel model-Regularized Learning Approach

Poster

Paper ID 9113

Author(s): Adeeba Khan (Indian Institute of Technology, Hyderabad); Swarubini P J (Indian Institute of Technology Hyderabad); Ryunosuke Kirita (Kumamoto University); Tomohiko Igasaki (Kumamoto University); Nagarajan Ganapathy (Indian Institute of Technology Hyderabad)

Speaker(s): Adeeba Khan (Indian Institute of Technology, Hyderabad)

C3P-L Wearable Neuro-Muscular Monitoring

Wed Oct 28, 14:30 – 16:00 · Shipping, Exchange & Mercurius Hall

Chair(s): MURAT KAYA YAPICI (SABANCI UNIVERSITY)

Multi-Layer and Dual-Plane Electrode Design for Improved EIT Tactile Sensing

Poster

Paper ID 8185

Author(s): Beatriz González Carmona (University of Glasgow); Huazhi Dong (The University of Edinburgh); Yunjie Yang (The University of Edinburgh); Chunxiao Hu (University of Glasgow); Morteza Amjadi Kolou (University of Glasgow); Haotian Chen (University of Glasgow)

Speaker(s): Beatriz González Carmona (University of Glasgow)

Sparse Insole Sensing for Center of Pressure Estimation in Gait Analysis Using Lightweight Machine Learning

Poster

Paper ID 8247

Author(s): Matthis Gautier (Paris-Saclay University); Fabien Parrain (Paris-Saclay University); Pierre-Yves Joubert (Paris-Saclay University)

Speaker(s): Matthis Gautier (Paris-Saclay University)

Femtosecond Laser Fabrication of an MWCNT-LIG Flexible Pressure Sensor with Fast Response for Multiscale Motion Monitoring

Poster

Paper ID 8351

Author(s): Haibo Xu (Beijing Information Science and Technology University); Mengyao Tian (Beijing Information Science and Technology University); Fan Wu (Laboratory of Intelligent Microsystems, Beijing Information ...); Yaqi Wang (Beijing Information Science and Technology University); Rui You (Beijing Information Science and Technology University); Yongjiu Yuan (Beijing Institute of Technology); Misheng Liang (Beijing Information Science and Technology University)

A Wireless Multi-Grid Resistive Sensor System for Interface Pressure Measurement in Scoliosis Braces

Poster

Paper ID 8368

Author(s): Mirko Van de Hoef (HU University of Applied Sciences Utrecht); Luuk Bolhuis (HU University of Applied Sciences Utrecht); Marius Versteegen (HU University of Applied Sciences Utrecht); Joris Van Tubergen (HU University of Applied Sciences Utrecht); Tim Idzenga (Hogeschool Utrecht)

Speaker(s): Mirko Van de Hoef (HU University of Applied Sciences Utrecht)

A Hall-Effect Magnetometer Knee Sensor for Low-Cost Wearable Fall Detection

Poster

Paper ID 8374

Author(s): Christopher Chan (California State University, Long Beach); Violet Le (California State University, Long Beach); Hollie Tran (California State University, Long Beach); Brandon Chau (California State University, Long Beach); Matthew Marietta (California State University, Long Beach); Camille Wong (California State University, Long Beach); Ava Hedayatipour (California State University, Long Beach)

Speaker(s): Hollie Tran (California State University, Long Beach)

A Wearable Piezoelectric MMG Sensor for Monitoring Quadriceps Recovery

Poster

Paper ID 8447

Author(s): Yunjeong Kim (ETRI); Hanbit Jin (Electronics and Telecommunications Research Institute); Saerom Seo (Electronics and Telecommunications Research Institute); Haeun Ji (Inha University Hospital); CHAN HWA HONG (Electronics and Telecommunications Research Institute); Eunwook Chang (Inha University); Minseok Cha (Sejong Sports Orthopedic Hospital); Dongjin Ryu (Inha University Hospital); Hye Jin Kim (Electronics and Telecommunications Research Institute)

Speaker(s): Yunjeong Kim (ETRI)

Motion-Robust Features for Electrodermal Startle Monitoring with a Smart Cane

Poster

Paper ID 8708

Author(s): Rafael Villalba-Bravo (Universidad de Málaga); Andrés Trujillo-León (Universidad de Málaga); Fernando Vidal-Verdú (Universidad de Málaga)

Speaker(s): Rafael Villalba-Bravo (Universidad de Málaga)

Validation of Proximity Sensors for Slippage Detection in Wearable Eye Trackers

Poster

Paper ID 8738

Author(s): Andrea Rocchi (Polytechnic University of Milan); Daniele Bani (EssilorLuxottica); Alberto Pettenella (Luxottica); Jacopo Spagnoli (Polytechnic University of Milan); Filippo Melloni (EssilorLuxottica); Luca Merigo (Luxottica); Marco Carminati (Politecnico di Milano)

Speaker(s): Marco Carminati (Politecnico di Milano)

Automatic Eye-Activity Detection with Electrooculogram-Measuring Mouthguard

Poster

Paper ID 8830

Author(s): Han Cat Nguyen (McGill University); Sharmistha Bhadra (McGill University, Canada)

Speaker(s): Sharmistha Bhadra (McGill University, Canada)

Detachable Ferroelectret Sensor System for Wearable Force Myography

Poster

Paper ID 8897

Author(s): Mark Suppelt (Technische Universität Darmstadt); Julian Seiler (Technische Universität Darmstadt); Tom Wittbecker (Technische Universität Darmstadt); Antonia Bauer-Bromann (Technische Universität Darmstadt); Chiara Atorf (Technische Universität Darmstadt); Franziska Scheibel (Technische Universität Darmstadt); Mario Kupnik (Technical University Darmstadt)

Speaker(s): Mark Suppelt (Technische Universität Darmstadt)

Wednesday Afternoon Coffee Break

Wed Oct 28, 14:30 - 16:00 · Shipping, Exchange & Mercurius Hall

Closing/Conference Awards

Wed Oct 28, 16:00 - 17:00 · Rotterdam Hall 1 & 2